

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,  
MELBOURNE.

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OFFICIAL  
YEAR BOOK  
OF THE  
COMMONWEALTH OF AUSTRALIA,  
CONTAINING AUTHORITATIVE STATISTICS FOR THE PERIOD  
1901-1911

AND CORRECTED STATISTICS FOR THE PERIOD 1788 TO 1900.

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No. 5.—1912.

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PUBLISHED UNDER THE AUTHORITY OF THE MINISTER FOR HOME AFFAIRS,

BY

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BY AUTHORITY.

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## PREFACE.

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By the Constitution of the Commonwealth of Australia, the Commonwealth is empowered "to make laws for the peace, order, and good government of the Commonwealth, with respect to," *inter alia*, "Census and Statistics." In exercising the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following the "Commonwealth Bureau of Census and Statistics" was created. The publication here presented is the fifth authoritative Year Book issued under the Federal Constitution.

This Year Book furnishes corrected statistics for the whole period of Australian settlement, viz., from 1788 to 1911. Wherever space has permitted, detailed statistics have been furnished for each year since Federation, viz., from 1901 to 1911. In the few instances where this has proved impracticable, reference will be necessary to Year Books Nos. 1 to 4. The inclusion, as stated, of the total available information in the more important branches of statistics enables this publication to be used wherever it is desired to make a comparative survey of the evolution of this portion of the British Empire. Not only are the results given for the Commonwealth as a whole, but also for each State therein.

The general arrangement of the publication, which has been widely commended, corresponds with that of previous issues, and is shewn in the synopsis on pp. xiii. to xxix. immediately following.

In addition, however, to what may be called purely statistical matter, each issue contains special articles dealing at length with some particular subject or subjects of more or less permanent interest. These cannot of course be repeated year after year, but usually a brief condensation is given in subsequent issues. Though many articles in Year Books Nos. 1 to 4 have been reduced to synopses or deleted, sufficient indication is given to enable the subject to be traced in previous issues.

The present issue of the Year Book contains several new features of interest. Among these may be mentioned the section dealing with the Islands of Australia, Cost of Living, Northern Territory, and Preferential Voting. The section dealing

with Population contains results for the Census of 1911, additional tables also figuring in the Appendix. Considerable additions have been made to the section on Vital Statistics (see pp. 220 to 250), and Public Hygiene. A bibliography of recent works on Australia will be found on p. 10. Descriptions of Norfolk and Lord Howe Islands have been added to the Miscellaneous Section. A Statistical Summary and a Chronological Table, which will be found on pages xxxiii. to xl., appear for the first time and will, it is hoped, prove useful. Among the various additions and improvements to the maps and graphs, the maps shewing monthly and annual temperatures and wettest months, density of population at Census of 1911, and artesian areas in the Commonwealth may be specially mentioned. A large number of new graphs has been included in the section dealing with Vital Statistics. Blocks representing the three prize winning designs for the Federal Capital have also been included. The full text of the Commonwealth Constitution Act, and Amendments, appear on pages 13 to 24.

The subject matter throughout is dealt with, as far as possible, from the following points of view, viz :—

(i.) The development of the individual States. (ii.) The progress of Australia as a whole from the earliest times. (iii.) The statistical comparison of Australia with other leading countries of the world.

A feature of this publication is the use made of maps and diagrams. As a rule facts can be properly appreciated only by the use of graphs, and the progress of events, the characteristics of growth and decline, can in general be grasped much more readily graphically than numerically. The diagram or "graph" is a direct picture in which the relative magnitudes are preserved and by which instantaneous comparisons of a wide range of facts are made possible at a glance. The statistical data, however, are also given *in extenso* numerically.

The development of Australia has been in many instances very remarkable, and this could be shewn only by tables and graphs dating back to its beginning in 1788. In most cases accurate data are not available for years much before 1860. In such cases, therefore, it seemed sufficient at present to give continuous results from that year onwards.

The great mass of material embodied in each Year Book is always carefully examined, but it would be idle to hope that all error has been avoided. The Commonwealth Statistician desires to express appreciation of the opportunity afforded him of perfecting the matter of the Year Book, by those who have been kind enough to point out defects or make suggestions.

The corresponding years indicated in various sections of this book do not always necessarily refer to the same period, the year ending in some cases on 31st December, 30th June, or 31st March, etc. The precise period for which returns are given is indicated where necessary.

Recent information or returns which have come to hand since the various Sections were sent to press, may be found in the Appendix, p. 1219 *et seq.*, and the publication has been delayed slightly in order to include the more important results of the 1911 Census.

In conclusion, the Commonwealth Statistician desires to express his cordial thanks to the State Statisticians, and to the responsible officers of the various Commonwealth and State Departments, who have kindly, and often at considerable trouble, supplied all desired information.

G. H. KNIBBS,

*Commonwealth Statistician.*

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,

25th June, 1912.

# INDEX TO SPECIAL ARTICLES, ETC., APPEARING IN PREVIOUS ISSUES.

These articles have appeared in former issues of the Commonwealth Year Book, but, owing to exigencies of space, they are not included in this publication.

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## CORRIGENDA.

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Page 50, in table "Square Miles of Territory per Mile of Coast Line," for "1,310 " read "11,310 " as Coast-line of Continent.

„ 352, in the sentence under the first table after the words "account for about 70 "per cent.," insert the following, viz., "of the aggregate number of bales "imported. Such a comparison is, however, somewhat misleading, as the "River Plate bale is much larger than the Australasian or the Cape bale. "Allowing approximately for the difference in size of the several bales, it "may be said that the importations from Australasia represent about 60 "per cent of the total."

„ 234, in the "Explanation of Graphs," for "1,000,000 of population " in lines 5, 6, and 7 of the Explanation, read "10,000,000 of population."

# STATISTICAL SUMMARY.

## STATISTICAL SUMMARY FOR THE COMMONWEALTH, 1861-1910.

(Figures for 1911, where available, will be found in the Appendix, and, in some instances, have been incorporated in the succeeding sections.)

Heading.		Years.						
		1861.	1871.	1881.	1891.	1901.	1906.	1910.
Population	Males	669,373	928,918	1,247,059	1,736,617	2,004,836	2,126,730	2,296,308
	Females	498,776	771,970	1,059,677	1,504,368	1,820,077	1,964,755	2,128,775
	Total	1,168,149	1,700,888	2,306,736	3,240,985	3,824,913	4,091,485	4,425,083
Births	No.	48,908	63,625	80,004	110,187	102,945	107,890	116,801
	Rate	42.28	38.00	35.26	34.47	27.16	26.57	26.73
Deaths	No.	20,061	22,175	33,327	47,430	46,330	44,333	45,590
	Rate	17.34	13.24	14.69	14.84	12.22	10.92	10.43
Marriages	No.	10,000	11,623	17,244	23,862	27,753	30,410	36,592
	Rate	8.64	6.94	7.60	7.47	7.32	7.49	8.37
Agriculture—								
Wheat	Area, acs.	704,431	1,279,778	3,002,064	3,335,528	5,115,965	5,982,186	7,372,456
	Yld., bshl	10,236,549	11,917,741	21,443,862	25,676,265	38,561,619	66,421,359	95,111,983
	Av. "	14.53	9.31	7.14	7.70	7.54	11.10	12.90
Oats	Area, acs.	129,738	225,492	194,816	246,129	461,430	581,843	676,688
	Yld., bshl	3,090,982	4,251,630	4,795,897	5,726,256	9,789,854	13,612,007	15,428,456
	Av. "	23.82	18.85	24.62	23.27	21.22	23.39	22.80
Barley	Area, acs.	27,093	48,164	75,864	68,068	74,511	106,336	108,424
	Yld., bshl	507,879	726,158	1,353,380	1,178,560	1,519,819	2,248,432	2,226,368
	Av. "	18.75	15.08	17.84	17.31	20.40	21.14	20.53
Maize	Area, acs.	61,178	142,078	165,777	284,428	294,849	325,581	414,914
	Yld., bshl	1,799,862	4,576,635	5,726,266	9,261,922	7,034,786	10,172,254	13,044,081
	Av. "	29.18	32.21	34.54	32.56	23.86	31.24	31.44
Hay	Area, acs.	222,003	303,274	768,338	942,166	1,688,402	1,657,000	2,258,405
	Yld., tons	298,184	375,871	767,194	1,067,255	2,024,608	2,259,240	3,175,851
	Av. "	1.34	1.24	1.00	1.13	1.20	1.36	1.41
Potatoes	Area, acs.	47,338	67,911	76,265	112,884	109,685	146,681	151,515
	Yld., tons	147,610	212,896	243,216	380,477	322,524	507,153	399,851
	Av. "	3.12	3.13	3.19	3.37	2.94	3.46	2.64
Sugar	Area, acs.	...	11,576	19,708	45,444	86,950	108,572	100,237
	Yld., tons	...	176,632	349,627	737,573	1,367,802	1,950,340	2,000,758
	Av. "	...	15.25	17.74	16.23	15.73	17.96	19.96
Cane	Area, acs.	7,010	16,253	14,570	48,882	63,677	62,557	59,114
	Yld., gal	495,000	2,104,000	1,488,000	3,535,000	5,816,037	5,940,943	5,866,049
Total value all agricultural production		...	8,941,000	15,519,000	16,480,000	23,835,000	25,349,000	39,752,000
Pastoral, dairying, etc.								
Live	(Sheep, No.	20,980,123	40,072,955	65,092,719	106,421,068	72,040,211	83,687,655	92,047,015
	Cattle "	3,846,554	4,277,928	8,010,991	11,112,112	8,491,428	9,349,409	11,744,714
	Stock "	431,695	701,530	1,088,029	1,584,737	1,630,420	1,765,186	2,165,866
Wool prod., lb. greasy	Horses	319,147	703,188	845,888	931,309	813,569	813,569	1,025,850
	Figs	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...
Butter product'n, lbs.	...	...	...	...	...	...	...	...
	Cheese	...	...	...	...	...	...	...
	Bacon and ham	...	...	...	...	...	...	...
Total estimated value of pastoral and dairying production		...	20,736,000	29,538,000	39,256,000	36,890,000	59,000,000	74,380,000
Mineral production—								
Gold	...	9,950,000	7,239,106	5,194,390	5,281,861	14,005,732	14,631,745	11,553,840
	Silver and lead	5,702	29,488	31,130	3,717,825	2,367,667	3,623,912	2,503,909
	Copper	458,758	824,111	673,786	362,745	2,208,590	3,344,744	2,383,412
Tin	...	11,937	18,597	1,145,603	560,750	492,576	1,509,188	950,768
	Zinc	...	...	...	2,622	4,057	292,806	1,289,781
	Coal	228,935	325,747	626,746	1,908,028	2,602,770	2,669,948	3,684,041
Total value all mineral production		10,557,533	8,484,728	7,813,523	12,093,837	22,043,104	26,643,007	23,215,191
Forestry production—								
Quantity of local timber	...	...	...	...	...	...	...	...
	sawn or hewn	...	...	...	...	...	...	...
	sup. ft.	...	...	...	...	...	...	...
Total value all Forestry production		...	...	...	...	452,131,252	429,166,603	495,056,699
Manufactories—†								
No. of factories	...	...	...	...	...	...	11,575	18,822
	Hands employed	...	...	...	...	...	228,560	286,831
	Wages paid	...	...	...	...	...	...	23,874,959
Total value of output		...	...	...	...	...	...	120,770,674
Value added in process of manufac. £		...	...	...	...	...	31,172,000	48,048,032

## STATISTICAL SUMMARY FOR THE COMMONWEALTH—(continued).

Heading.	Years.						
	1861.	1871.	1881.	1891.	1901.	1906.	1910.
Shipping—							
Oversea vessels (No. ent. & cleared ton.)	2,466 1,149,476	2,748 1,312,642	3,284 2,549,364	3,778 4,726,307	4,028 6,541,991	4,155 7,966,658	4,048 9,333,146
Commerce—							
Imports oversea £	17,651,000	17,017,000	29,067,000	37,711,000	42,434,000	44,745,000	60,014,351
" per head £	15/5/2	10/3/3	12/16/2	11/16/0	11/3/11	11/0/4	13/14/8
Exports oversea £	17,413,000	21,725,000	27,528,000	36,043,000	49,696,000	69,738,000	74,491,150
" per head £	15/1/1	12/19/6	12/2/8	11/5/6	13/2/2	17/3/6	17/0/10
Total oversea trade £	35,064,000	38,742,000	56,595,000	73,754,000	92,130,000	114,483,000	134,505,501
" per head £	30/6/3	23/2/9	24/18/10	23/1/6	24/6/1	28/3/10	30/15/6
Customs and excise duties ... £	...	...	4,809,326	7,440,869	8,656,530	9,209,791	12,232,125
" per head, £	...	...	2/2/5	2/6/7	2/5/8	2/5/1	2/15/11
Principal Oversea Exports—							
Wool lbs. (greasy)	60,367,492	176,635,820	328,369,169	619,259,753	518,018,134	545,132,180	743,449,869
" bushels	5,005,799	9,459,629	13,173,026	19,940,029	15,237,454	22,645,769	28,777,283
Wheat £	87,249	799,924	5,364,653	9,794,791	20,260,058	30,262,335	47,761,895
" £	24,041	193,732	1,189,762	1,938,864	2,774,643	4,913,798	9,933,561
Flour tons	7,602	12,938	49,549	33,363	96,814	166,881	199,946
" £	113,172	170,415	519,635	328,423	589,604	1,216,849	1,244,165
Butter lbs.	664,160	1,812,688	1,298,758	4,239,494	34,607,397	75,802,356	87,928,151
" £	21,692	45,813	39,383	206,868	1,451,168	3,240,063	3,952,908
Skins and hides... £	180,292	100,123	316,878	873,685	1,250,938	2,752,711	3,950,258
Tallow ... £	148,201	914,278	644,149	571,069	677,745	878,699	1,890,867
Meats ... £	37,575	566,780	362,965	460,894	2,611,244	2,373,650	4,792,299
Timber (undressed) £	32,367	42,568	118,117	88,448	731,301	979,630	976,355
Gold ... £	9,957,056	7,184,833	6,445,365	5,703,532	14,315,741	16,875,456	4,746,929
Silver and lead ... £	4,237	37,891	57,954	1,932,278	2,250,253	2,958,258	2,853,646
Copper ... £	381,718	598,538	676,515	417,687	1,619,145	3,069,305	2,270,313
Coal... £	63,061	134,355	361,081	645,972	986,957	894,002	910,063
Railways—							
Lgth. of line open, mls.	205	970	3,832	9,541	12,577	13,887	15,467
Capital cost ... £	6,654,516	19,269,786	42,741,350	99,764,093	123,587,000	134,972,000	146,882,000
Gross revenue ... £	318,823	1,102,650	3,910,122	8,654,085	11,038,000	12,808,000	16,042,000
Working expenses £	234,040	608,332	2,141,735	5,630,182	7,149,000	7,541,000	9,899,000
Per cent. of work'g expenses on earnings%	73.41	55.17	54.77	65.06	64.76	58.87	61.70
Postal—							
Letters and postcards dealt with ... No.	12,844,000	24,382,000	67,640,000	157,297,000	220,853,000	317,049,000	392,851,000
" per head ...	11.13	14.54	29.61	49.07	58.26	78.09	89.89
Newspapers dealt with ... No.	9,603,000	13,336,000	38,063,000	85,280,000	102,727,000	103,793,000	132,415,000
" per head ...	8.32	7.95	16.66	26.61	27.10	25.56	30.30
Banks of Issue—							
Note circulation £	2,970,357	2,456,487	3,978,711	4,417,269	3,406,175	3,360,075	4,291,101
Coin & bullion held £	4,662,415	6,168,869	9,108,243	16,712,923	19,737,572	21,508,275	32,728,537
Advances ... £	18,261,129	26,039,573	57,732,824	129,741,583	89,167,499	92,246,958	105,030,155
Deposits ... £	13,817,435	21,856,959	53,849,455	98,345,338	90,965,530	107,675,919	135,145,240
Savings Banks—							
Number of depositors	27,877	100,713	250,070	614,741	964,553	1,185,608	1,483,573
Total deposits ... £	1,320,739	3,193,285	7,854,480	15,536,592	30,882,645	38,286,219	53,117,498
Aver. per depositor £	47/7/7	31/14/2	31/8/2	25/5/6	32/0/4	32/5/10	35/16/1
Population ... £	0/18/8	1/18/9	3/10/5	4/18/7	8/4/0	9/9/10	12/5/8
State Schools—							
Number of schools	1,864	2,502	4,494	6,231	7,012	7,308	7,910
Teachers ... No.	2,471	4,641	9,028	12,564	14,500	15,802	17,706
Enrolment ...	106,049	236,710	432,320	561,153	638,478	609,592	748,037
Aver. attendance ..	73,446	137,767	255,143	350,773	450,246	442,440	455,858

\* Partly estimated 1861, 1871, and 1881. † Owing to variation in classification and lack of information effective comparison is impossible, ‡ Information not available.

# CHRONOLOGICAL TABLE.

## CHRONOLOGICAL TABLE OF CHIEF EVENTS SINCE THE ESTABLISHMENT OF SETTLEMENT IN AUSTRALIA.

Year.	
1788	N.S.W.—Arrival of "First Fleet" at Botany Bay. Land in vicinity being found unsuitable for settlement, the expedition moved to Sydney Cove (now Port Jackson). Formal possession of Sydney Cove, Port Jackson taken by Captain Phillip on 26th January. Formal proclamation of colony on 7th February. Branch settlement established at Norfolk Island. French navigator La Pérouse visits Botany Bay.
1789	N.S.W.—First wheat harvest at Parramatta, near Sydney. Discovery of Hawkesbury River. Outbreak of small-pox amongst aborigines.
1790	N.S.W.—"Second Fleet" reached Port Jackson. Landing of the New South Wales Corps. Severe suffering through lack of provisions. First Circumnavigation of Australia by Lieut. Ball.
1791	N.S.W.—Arrival of "Third Fleet." Territorial seal brought by Governor King. First grape vines planted.
1792	N.S.W.—Visit of <i>Philadelphia</i> , first foreign trading vessel.
1793	N.S.W.—First free immigrants arrived in the <i>Bellona</i> .
1794	N.S.W.—Establishment of Settlement at Hawkesbury River.
1795	N.S.W.—Erection of the first printing press. Descendants of strayed cattle discovered at Cowpastures, Nepean River.
1797	N.S.W.—Discovery of coal at Illawarra, and on Hunter River. Introduction of merino sheep from Cape of Good Hope.
1798	Tas.—Tasmania proved an island by voyage of Bass and Flinders.
1800	N.S.W.—First export of coal.
1801	N.S.W.—First rough Census muster. First colonial manufacture of blankets and linen. First issue of copper coin.
1802	Vic.—Discovery of Port Phillip by Lieut. Murray.
1803	N.S.W.—First Australian wool taken to England by Capt. Macarthur. Issue of "The Sydney Gazette," first newspaper. Vic.—Attempted colonisation of Port Phillip by Captain Collins. Tas.—First settlement in Tasmania formed at Risdon by Lieut. Bowen.
1804	N.S.W.—Insurrection of convicts at Castle Hill. Vic.—Abandonment of settlement at Port Phillip. Tas.—Foundation of settlement at Hobart by Lieut.-Governor Collins, and at Yorktown by Colonel Paterson.
1805	N.S.W.—First extensive sheep farm established at Camden by Capt. Macarthur. Portion of settlers from Norfolk Island transferred to Tasmania.
1806	N.S.W.—Shortage of provisions, and floods. Tas.—Settlement at Launceston.
1807	N.S.W.—Final shipment of convicts from Norfolk Island. First shipment of merchantable wool.
1808	N.S.W.—Deposition of Governor Bligh.
1810	N.S.W.—First post-office established. Tas.—First newspaper printed.
1813	N.S.W.—Passage across Blue Mountains discovered by Wentworth, Lawson, and Blaxland.
1814	N.S.W.—Australia, previously known as "New Holland," received present name on recommendation of Flinders. Creation of Civil Courts.

- 1815 N.S.W.—Town of Bathurst laid out by Governor Macquarie. Evans discovered Macquarie River. Tas.—Arrival of first immigrant ship with free settlers. First export of wheat to Sydney.
- 1817 N.S.W.—Oxley's first exploration inland. Discovery of Lakes George and Bathurst, and the Goulburn Plains, by Meehan and Hume. Qld.—Lieut. King surveyed and charted portion of eastern coast.
- 1818 N.S.W.—Cessation of free immigration. Oxley reaches Macquarie River.
- 1819 N.S.W.—Opening of Savings Bank at Sydney.
- 1820 N.S.W.—Discovery of Murrumbidgee and Clyde Rivers. Tas.—First importation of pure merino sheep.
- 1821 N.S.W.—Foundation of Philosophical (now Royal) Society. Tas.—Establishment of penal settlement at Macquarie Harbour.
- 1823 N.S.W.—First Australian Constitution. Discovery of gold at Fish River by Assistant-Surveyor McBrien. Arrival in Sydney of Dr. John Dunmore Lang. Qld.—Oxley discovers Brisbane River.
- 1824 N.S.W.—Introduction of trial by jury. Proclamation of freedom of the press. First land regulations. First manufacture of sugar. Hume and Hovell's overland expedition to the south. Vic.—Hume and Hovell arrive at Corio Bay. Qld.—Expedition to prepare for establishment of penal settlement at Moreton Bay.
- 1825 N.S.W.—First jury empanelled at Sydney. Commencement of three years' drought. Tas.—Proclamation of Van Diemen's Land, as separate colony.
- 1826 N.S.W.—Darling River discovered by Captain Sturt. Vic.—Foundation of settlement at Western Port. Qld.—Penal settlement established at Moreton Bay. W.A.—Settlement founded at King George's Sound, Albany, by Major Lockyer.
- 1827 N.S.W.—Colony becomes self-supporting. Feverish speculation in land and stock. Qld.—Darling Downs discovered by Cunningham. Tas.—Copper ore discovered at Macquarie Harbour.
- 1828 N.S.W.—Second Constitution. First Census. Sturt's expeditions—discovery of Darling and Murray Rivers. Cotton first grown in Sydney Botanical Gardens. Vic.—Abandonment of settlement at Western Port. Qld.—Cunningham discovers a route from Moreton Bay to the Darling Downs, and explores Brisbane River to its source. Tas.—First land sales.
- 1829 N.S.W. and S.A.—Sturt journeys down Murrumbidgee and Murray Rivers to mouth of latter. W.A.—Foundation of settlement at Swan River, under command of Lieut.-Governor Stirling.
- 1830 N.S.W.—Insurrection of convicts at Bathurst. Inland exploration to southward by Sturt. Qld.—Murder of Captain Logan at Moreton Bay. W.A.—First Executive Council appointed. S.A.—Sturt discovers Lake Alexandrina. Tas.—Trouble with natives. Black line organised with object of forcing aborigines into Tasman's Peninsula. Attempt failed. Between 1830 and 1835, however, George Robinson, by friendly suasion, succeeded in gathering the small remnant of aborigines (203) into settlement at Flinders Island.
- 1831 N.S.W.—Lord Ripon's land regulations. Mitchell's explorations north of Liverpool Plains. Launching of first colonial steamer. Arrival at Sydney of first steamer *Sophia Jane*. First immigrant ship arrived. S.A.—Wakefield's first colonisation committee. Murder of Captain Barker by aborigines. W.A. and Tas.—Lord Ripon's land regulations. W.A.—Appointment of Executive and Legislative Council. First newspaper—"Fremantle Observer."
- 1832 N.S.W.—Initial appropriation of public funds for immigration.
- 1834 Vic.—Settlement formed at Portland Bay by Henty Bros. S.A.—Formation of the South Australian Association. W.A.—Severe reprisals against natives at Pinjarrah.
- 1835 N.S.W.—Establishment of dépôt at Fort Bourke on the Darling River, by Mitchell. Vic.—John Batman's arrival at Port Phillip. Makes treaty with the natives

- for 600,000 acres of land, but claim disallowed by Imperial Government. John Pascoe Fawkner founds Melbourne on site previously selected by Batman.
- 1836 N.S.W.—Fall of snow in Sydney. Mitchell's explorations in the south (Australia Felix). "Squatting" formally recognised. Vic.—Proclamation of Port Phillip district as open for settlement. Captain Lonsdale appointed Resident Magistrate. S.A.—Founding of South Australia under Governor Hindmarsh.
- 1837 N.S.W.—Appointment in London of Select Committee on Transportation. Heavy snowfall near Sydney. Vic.—Governor Bourke arrived from Sydney and gave the name of Melbourne to metropolis of Victoria. First sale of Crown lands in Melbourne. S.A.—First newspaper published in Adelaide. Tas.—Sir John Franklin assumes Governorship.
- 1838 N.S.W.—Discontinuance of assignment of convicts. Drought and failure of crops. Frenzied speculation. Vic.—First Census of Victoria—population 3511. Qld.—Settlement of German missionaries at Moreton Bay. S.A.—"Over-landing" of cattle along the Murray route by Hawden and Bonney.
- 1839 N.S.W.—Finding of gold near Hartley by Count Strzelecki. Vic.—Appointment of Mr. C. J. LaTrobe as Superintendent Port Phillip district.
- 1840 N.S.W.—Abolition of transportation to New South Wales. Land regulations—proceeds of sales to be applied to payment for public works and expenditure on immigration. Foundation of viticultural industry. Monetary crisis. Vic.—Determination of northern boundary. Colonists desire separation from New South Wales. Qld.—Breaking up of penal settlements and throwing open of Moreton Bay district to free settlers. S.A.—Eyre begins his overland journey from Adelaide to King George's Sound. Tas.—Visit of the *Erebus* and *Terror* to Hobart. Dr. Hooker investigates the island flora.
- 1841 N.S.W.—Alluvial gold found near Bathurst by Rev. W. B. Clarke. Separation of New Zealand. W.A.—Completion of Eyre's overland journey from Adelaide to King George's Sound. Tas.—Renewal of transportation.
- 1842 N.S.W.—Incorporation of Sydney. Vic.—Incorporation of Melbourne.
- 1843 N.S.W.—First Representative Constitution. First manufacture of tweed. Financial crisis. Qld.—Moreton Bay granted legislative representation. S.A.—Discovery of copper at Kapunda. Tas.—Agitation against further introduction of convicts.
- 1844 S.A.—Sturt's last expedition inland. Qld.—Leichhardt's expedition from Darling Downs to Port Essington.
- 1845 N.S.W.—Mitchell's explorations on the Barcoo. S.A.—Discovery of the Burra copper deposits. Qld.—Explorations by Mitchell and Kennedy. Census in March shewed population as 2210. W.A.—First steam vessel (*H.M.S. Driver*) visited Fremantle.
- 1846 N.S.W.—Mr. Gladstone proposed to revive transportation. Initiation of meat preserving. Qld.—Foundation of settlement at Port Curtis. S.A.—Proclamation of North Australia. W.A.—Organisation of first mining company. Foundation of New Norcia Mission.
- 1847 N.S.W.—Crown Land Leases Act. Opening of iron smelting works near Berrima. Vic.—Melbourne created a City by Royal Letters Patent. Qld.—Explorations by Burnett and Kennedy. W.A.—Issue of regulations for leasing Crown lands. First export of guano.
- 1848 N.S.W.—Attempts to revive transportation. Influx of Chinese. Vic.—Earl Grey returned as Melbourne member of the Legislative Council. Qld.—Leichhardt's last journey. Kennedy speared by the blacks at York Peninsula. Chinese brought in as shepherds. W.A.—Copper and lead discovered in the Champion Bay district by the Messrs. Gregory. First Census of the colony.

- 1849 N.S.W.—Indignation of colonists at arrival of convict ship *Hashemy*. Exodus of population to goldfields of California. Vic.—Outburst of indignation at arrival of *Randolphe* with convicts. Qld.—Assignment of convicts per *Hashemy* to squatters on Darling Downs. W.A.—Commencement of transportation to Western Australia.
- 1850 N.S.W.—Final abolition of transportation. First sod of first Australian railway turned at Sydney. S.A.—Representative government granted. W.A.—Pear oysters found by Lieut. Helpman at Saturday Island Shoal. Tas.—Representative government granted. Discovery of coal at the Don and Mersey.
- 1851 N.S.W.—Payable gold discovered by Hargreaves, near Bathurst. Telegraph first used. Vic.—Separation of Port Phillip—erected into independent colony under the name of Victoria. Discovery of gold. “Black Thursday,” Feb. 6th, a day of intense heat, when several persons died and a vast amount of damage to property was occasioned by fires. Qld.—Agitation for separation from New South Wales. S.A.—Financial depression. Tas.—Serious exodus of population to goldfields on mainland. W.A.—Proclamation of Legislative Council Act.
- 1852 N.S.W.—Destruction of Gundagai by flood—77 lives lost. Arrival of the *Chusan*, first P. and O. mail steamer from England. S.A.—First steamer ascends the Murray River to the junction with the Darling. Tas.—Meeting of first elective Council protests against transportation. Payable gold discovered at The Nook, near Fingal, and at Nine Mile Springs.
- 1853 Tas.—Abolition of transportation. Name Van Diemen’s Land disappears—replaced by Tasmania.
- 1854 N.S.W.—Russian war-scare and volunteer movement. Vic.—Opening of first Australian railway—Flinders Street to Port Melbourne. Riots on Ballarat goldfields. Storming of the Eureka Stockade, Dec. 3rd. Fifth Census—population 236,798.
- 1855 N.S.W.—Opening of railway—Sydney to Parramatta. Introduction of responsible Government. Vic.—Proclamation of Constitution. Qld.—Gregory’s expedition in search of Leichhardt. S.A.—Responsible government. Tas.—Responsible government.
- 1856 N.S.W.—First elective Parliament. Pitcairn Islanders placed on Norfolk Island, which was placed under jurisdiction of Governor of New South Wales. Tas.—Opening of first Parliament. W.A.—A. C. Gregory’s expedition in search of Leichhardt.
- 1857 N.S.W.—Heavy floods. Wreck of the *Dunbar* (119 lives lost), and *Catherine Adamson* (21 lives lost), at Sydney Heads. Select Committee on Federation. S.A.—Exploration by Babbage and Warburton.
- 1858 N.S.W.—Establishment of manhood suffrage and vote by ballot. Telegraphic communication between Sydney and Melbourne. S.A.—Passage of Torrens’ Real Property Act. Stuart’s explorations. Qld.—The Canoona gold rush.
- 1859 Qld.—Proclamation of Queensland as separate colony. Tas.—First submarine cable, via Circular Head and King Is., to Cape Otway.
- 1860 N.S.W.—Disastrous floods on the Shoalhaven and at Araluen. Vic.—Burke and Wills start on their journey across Continent. S.A.—Copper discoveries at Wallaroo and Moonta.
- 1861 N.S.W.—Anti-Chinese riots at Lambing Flat and Burrangong goldfields. Opening of first tramway in Sydney—Cars drawn by horses. Robertson’s Land Acts. Messrs. Parkes and Dalley proceed to London as emigration lecturers. Regulation of Chinese immigration. Vic.—Seventh Census—population 540,322. Conference of Statisticians, Melbourne. Qld.—Burke and Wills perish in the Great Stony Desert. Expedition despatched to search for their remains. First Census. W.A.—Exploration of F. Gregory in the North-west.
- 1862 N.S.W.—Raid by bushrangers on the Lachlan gold escort (£14,000 taken). Abolition of State aid to religion. Real Property Act. Vic.—C. Gavan Duffy’s



- Land Act. S.A.—Stuart crosses the Continent from north to south. Qld.—McKinlay's explorations. Heavy floods on Fitzroy River. W.A.—Severe floods—damage to property, £30,000. First export of pearl-shell.
- 1863 N.S.W.—Bathurst and Canowindra "held up" by bushranger Gilbert. Vic.—Inter-colonial conference at Melbourne. S.A.—Taking over of the Northern Territory. W.A.—Initiation of settlement in the North-west district.
- 1864 N.S.W.—Frequent outrages by bushrangers. Qld.—First railway begun. First sugar made from Queensland cane. W.A.—Messrs. Panton, Harding and Goldwyer, murdered by natives. Tas.—First successful shipment of English salmon ova.
- 1865 N.S.W.—Destruction by fire of St. Mary's Cathedral, Sydney. Qld.—Opening of first railway.
- 1866 N.S.W.—Passage of Public Schools Act of (Sir) Henry Parkes. Vic.—Political deadlock. Qld.—Financial crisis. S.A.—Introduction of camels for exploration, etc.
- 1867 Vic.—Imposition of protective tariff. Qld.—Discovery of gold at Gympie.
- 1868 N.S.W.—Attempted assassination of the Duke of Edinburgh at Clontarf, near Sydney. Qld.—Passage of Act to regulate island labour traffic. W.A.—Arrival of the *Hougomont*, last convict ship. Tas.—First sod of first railway (Launceston and Western) turned by Duke of Edinburgh.
- 1869 N.S.W.—Establishment of Eskbank Iron Company. Vic.—Reduction of property qualification for members and electors of Legislative Council. W.A.—Opening of first telegraph line, from Perth to Fremantle. Tas.—Opening of second cable.
- 1870 N.S.W.—Opening of Intercolonial Exhibition at Sydney in celebration of centenary of Cook's landing in Australia. Withdrawal of Imperial troops. Vic.—Intercolonial Congress at Melbourne. S.A.—Commencement of trans-continental telegraph. W.A.—Meeting of first Legislative Council under Responsible Government.
- 1871 N.S.W.—Permanent military force raised. Vic.—Increase of protective duties. Qld.—Foundation of Queensland National Bank. W.A.—Passage of Elementary Education Act. Forrest's explorations. Tas.—Discovery of tin at Mount Bischoff. Launceston-Western railway opened for traffic.
- 1872 N.S.W.—International Exhibition at Sydney. Death of W. C. Wentworth, Qld.—Discovery of tin at Stanthorpe, copper at Mt. Perry, coal at Wide Bay, gold at the Palmer. S.A.—Cable from Singapore to Port Darwin. Completion of trans-continental telegraph line. W.A.—Cyclonic storms—destruction of town of Roeburne. Tas.—Completion of direct telegraphic communication with England.
- 1873 N.S.W.—Intercolonial Conference at Sydney. First volunteer encampment. Inauguration of mail service with San Francisco. W.A.—Warburton crosses from transcontinental telegraph line to head of De Grey River.
- 1874 N.S.W.—Triennial Parliaments Act passed. Intercolonial Conference. Qld.—Dalrymple's discoveries on north-eastern seaboard. W.A.—Explorations by E. Giles.
- 1875 Qld.—Transfer of Port Albany Settlement to Thursday Island. S.A.—Wreck of the *Gothenburg*—Judge Wearing and other well-known Adelaide citizens drowned. Education Act passed. Explorations by Giles, Gosse, and Warburton. W.A.—J. and A. Forrest cross colony from east to west. Tas.—Conference of Statisticians, Hobart.
- 1876 N.S.W.—Completion of cable—Sydney to Wellington. Vic.—Members of Legislative Assembly increased to 86. W.A.—Violent gale at Exmouth Gulf, number of pearling vessels wrecked, 69 lives lost. Giles crosses colony from east to west. Tas.—Death of Truganini, last representative of Tasmanian aborigines.

1877. Vic.—Deadlock on question of payment to members. S.A.—Inauguration of University of Adelaide. W.A.—Opening of telegraphic communication with South Australia. Tas.—Discovery of rich gold-bearing quartz reef at Beaconsfield.
- 1878 N.S.W.—Seamen's strike. Vic.—Visit to England of Victorian delegation *re* alteration of Victorian Constitution. "Black Wednesday"—wholesale dismissal of civil servants. Qld.—Restriction of Chinese immigration.
- 1879 N.S.W.—First artesian bore at Killara. International Exhibition at Garden Palace, Sydney. First steam tramway. W.A.—Celebration of 50th anniversary of foundation of colony. A. Forrest's explorations in the Kimberley district.
- 1880 N.S.W.—Public Instruction Act passed. Sydney streets partially wood-paved. Vic.—Opening of first Victorian International Exhibition at Melbourne. Federal Conference at Melbourne and Sydney.
- 1881 N.S.W.—Further restrictions on Chinese immigration. Women admitted as students at University. Vic.—Reduction of property qualification for members and electors of Legislative Council, number of members increased to 42. W.A.—Cyclone near Roeburne wrecks number of pearling vessels. On the Ashburton, 1000 sheep destroyed by cyclone.  
First simultaneous Australian Census. Visit to Australia of T.R.H. Prince Albert Victor and Prince George of Wales.
- 1882 N.S.W.—Garden Palace destroyed by fire. W.A.—Nugget of gold found between Roeburne and Cossack.
- 1883 N.S.W.—Discovery of silver at Broken Hill. Completion of railway between New South Wales and Victoria. Qld.—Annexation of New Guinea—repudiated by Imperial authorities.  
Federal Conference held at Sydney.
- 1884 N.S.W.—Land legislation restricting sales by auction. Vic.—Appointment of First Public Service Board. W.A.—Stockdale's explorations.  
Federation Bill passed in Victoria. Similar measure rejected in New South Wales.
- 1885 N.S.W.—Military contingent sent to the Soudan. Opening of the Broken Hill Silver Mines. Qld.—Agitation for division of the colony. W.A.—First gold found by prospectors on the Margaret and Ord Rivers in the Kimberley district. Tas.—Silver-lead discovered at Mount Zeehan.  
Formation of the Federal Council of Australia.
- 1886 N.S.W.—Industrial depression. Wreck of the *Ly-ee-Moon*, *Coringamite*, and *Helen Nicol*. Qld.—Discovery of gold at Mount Morgan. W.A.—Proclamation of Kimberley goldfields. Tas.—Discovery of gold and copper at Mount Lyell. First session of Federal Council met at Hobart on the 26th January.
- 1887 N.S.W.—Disaster at Bulli coal mine (83 lives lost). Peat's Ferry (Hawkesbury River) railway accident. S.A.—International Exhibition at Adelaide. W.A.—Cyclone destroyed nearly the whole pearling fleet off the Ninety-Mile Beach—200 lives lost. Gold discovered at Yilgarn and Southern Cross.  
Australasian Conference in London. Australasian Naval Defence Force Act passed.
- 1888 N.S.W.—Destructive bush fires. Centennial celebrations. Restrictive legislation against Chinese. Imposition of poll-tax of £100. Strike of coal-miners at Newcastle. Vic.—Second Victorian International Exhibition held at Melbourne. Members of Legislative Council increased to 48, and of Assembly to 95. Qld.—Railway communication opened between Sydney and Brisbane. W.A.—Favenc's explorations.  
Centenary of first settlement in Australia. Conference of Australian Ministers at Sydney to consider question of Chinese immigration. First meeting of the Australasian Association for the Advancement of Science held in Sydney. Imperial Defence Act passed.

- 1889 N.S.W.—Destructive floods, Hunter River. W.A.—Framing of new Constitution.
- 1890 N.S.W.—Strike at Broken Hill. Maritime and shearers' strikes. Payment of members of Parliament. Destructive bush fires. Qld.—Wreck of the *Quetta*—146 lives lost. Floods and hurricanes. Industrial depression. W.A.—Granting of responsible government. Tas.—Opening of University.  
Meeting at Melbourne of Australasian Federation Conference. Pre-censal Conference of Statisticians at Hobart.
- 1891 N.S.W.—Election to Legislative Assembly of 35 Labour members. Arrival of Australian Auxiliary Squadron. Collapse of several building societies. Cessation of assisted immigration. Death of Sir John Robertson. W.A.—Opening of first Parliament under responsible government.  
Federal Convention in Sydney, draft bill framed and adopted.
- 1892 N.S.W.—Broken Hill miners' strike. Run on Government Savings Bank. Opening of Women's College, Sydney University. Vic.—Suspension of Railway Commissioners. W.A.—Discovery of gold by Messrs. Bayley and Ford at Coolgardie.
- 1893 N.S.W.—Departure by the *Royal Tar* of colonists for "New Australia." Electoral Act—"One man one vote." Financial crisis, chiefly affecting the eastern States.
- 1894 N.S.W.—Shearers' strike. S.A.—Adult Suffrage Bill assented to. Industrial depression.
- 1895 N.S.W.—Crown Lands Act of 1895. Death of Governor Sir R. Duff. Free-trade tariff. Land and income taxes.  
Conference of Premiers at Hobart *re* Federation.
- 1896 N.S.W.—Death of Sir Henry Parkes. Re-organisation of Public Service. Women's franchise. People's Federal Convention at Bathurst. S.A.—Departure of Calvert expedition.
- 1897 S.A.—Town of Palmerston destroyed. Floods and storms at Adelaide. Death of Sir Thomas Elder. Earthquake and hurricane in Northern Territory.
- 1897-8 Sessions of Federal Convention at Adelaide, Sydney and Melbourne.
- 1898 N.S.W.—First surplus of wheat for export.  
Draft Federal Constitution Bill submitted to electors in Victoria, New South Wales, South Australia, and Tasmania. Requisite statutory number of votes not obtained in New South Wales.
- 1899 N.S.W.—First contingent of troops to assist the British army in South Africa.  
Conference of Premiers in Melbourne to consider amendments in Federal Constitution Bill. Referendum—Bill accepted by New South Wales, Victoria, Queensland, South Australia, and Tasmania.
- 1900 N.S.W.—Old-age Pensions instituted. W.A.—Agitation for separation by gold-fields. Strike of railway engine drivers and firemen.  
Commonwealth Constitution Act receives Royal Assent, 9th July. Mr. (afterwards Sir) Edmund Barton forms first Federal Ministry.
- 1901 Proclamation of the Commonwealth at Sydney, and swearing-in of Ministry. Opening of first Federal Parliament at Melbourne by the Duke of Cornwall and York, who visits each State of the Commonwealth. Contingents sent to South Africa and China. Simultaneous Australasian Census.
- 1902 N.S.W.—Disastrous explosion at Mount Kembla Colliery—95 lives lost. Women's franchise. Jubilee of Sydney University. S.A.—Reduction of number of members of both Houses of Parliament. W.A.—Opening of pumping station at Northam in connection with Goldfields water supply.
- 1903 Vic.—Railway Strike (Enginemen). W.A.—Opening of Coolgardie and Kalgoorlie water supply.  
Inauguration of the Federal High Court. Conference of Statisticians in Melbourne.
- 1904 N.S.W.—Reduction of members of Legislative Assembly from 125 to 90.
- 1905 N.S.W.—Re-introduction of assisted immigration.

- 1906 Wireless telegraphy installed between Queenscliff, Vic., and Devonport, Tas. Consummation of Commonwealth Free-trade interstate by cessation of special Western Australian tariff. Conference of Statisticians of Australian States and New Zealand, under the presidency of the Commonwealth Statistician. Papua taken over by Commonwealth.
- 1907 N.S.W.—Strike of coal-miners in Newcastle district. Vic.—Opening of first Australian Exhibition of Women's Work in Melbourne. Bakers' strike, Melbourne. Opening of telephone, Sydney to Melbourne.  
Imperial Conference in London—Australia represented by the Hon. A. Deakin, Prime Minister. Introduction of new tariff in Federal Parliament. Allowance to Federal members of Parliament increased from £400 to £600.
- 1908 N.S.W.—Tramway employees' strike, Sydney. Fire at Newcastle—damage to property £150,000. Vic.—Railway accident at Braybrook Junction (Sunshine)—44 killed, 412 injured; compensation paid, £126,000.  
Yass-Canberra chosen as site of Federal Capital. Interstate Premiers' Conference at Melbourne. Visit of American Fleet to Australia.
- 1909 N.S.W.—Miners' strikes at Broken Hill and Newcastle. Arrest of strike leaders at Newcastle. Qld.—Opening of Queensland University. S.A.—Foundering of *Clan Ranald* in St. Vincent's Gulf—40 drowned. W.A.—Cyclone at Broome.  
Imperial Defence Conference in London—Commonwealth sends three representatives. Premiers' Conference at Hobart. Conference at Melbourne of Commonwealth and State Ministers *re* financial relations. Death at Parliament House of Sir Frederick Holder, Speaker of the House of Representatives. Commonwealth orders two destroyers and one first-class cruiser for fleet unit. Federal Treasurer orders £200,000 Australian silver coinage from British Mint. Visit of Lord Kitchener to report and advise on Commonwealth military defence. Loss of the *Waratah*—vessel sailed from Melbourne on 1st July with 300 passengers and crew, left Durban on the 26th July. Opening of Empire Commerce Congress at Sydney. Commencement of payment by Commonwealth of Old-age Pensions.
- 1910 Vic.—Railway accident at Richmond—9 killed, over 400 injured; compensation paid £129,000. S.A.—Strike of transport workers at Adelaide. W.A.—Cyclone at Broome—several pearling vessels wrecked, 3 whites and many coloured fishermen drowned. Strike of tramway employees at Perth. Wreck of the *Pericles* off Cape Leeuwin.  
Rt. Hon. Sir G. H. Reid takes up duty as High Commissioner for the Commonwealth of Australia in London. Defeat of the "Fusion" Government under the Hon. A. Deakin. The Hon. A. Fisher becomes Prime Minister. Referendum on financial relations between the Commonwealth and the States—electors accept proposal for transfer to Commonwealth of State debts, but reject proposal for return of 25s. per capita to States out of Commonwealth revenue for period of 25 years. Question settled for 10 years by Commonwealth deciding to pay the amount fixed—matter to be reopened at end of that period. Proclamation taking over Yass-Canberra (in New South Wales) as site for Federal Capital. Imposition of Federal Land Tax. Application of toll system to telephone services. Penny Postage. Visit of Scottish Agricultural Commission. Dutch squadron visits Australia. Arrival of the *Yarra* and *Parramatta*, first vessels of Australian navy. Australian Notes Act empowers Federal Treasurer to issue notes of various denominations. Admiral Sir R. Henderson visits Australia to advise on naval defence.
- 1911 First issue of Commonwealth notes. First Federal Census. Federal referenda relating to Monopolies and Industrial Legislation—proposals rejected. Introduction of compulsory military training. Launch of Commonwealth destroyer *Warrego* at Sydney. Establishment of penny postage to all parts of British Empire. Erection of first Commonwealth wireless station at Pennant Hills, Sydney.

**OFFICIAL YEAR BOOK**  
OF THE  
**COMMONWEALTH OF AUSTRALIA, 1911,**  
**AND EARLIER YEARS.**

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**SECTION I.**

**STATISTICAL ORGANISATION AND SOURCES OF INFORMATION.**

**§ 1. Introduction.**

1. **Development of Australian Statistics.**—In the first issue of the Commonwealth Official Year Book (No. 1, 1901-1907), an account was given of the origin and development of Australian Statistics; *vide* pp. 1 to 16 therein. Owing to considerations of space, however, this matter was considerably curtailed in succeeding Year Books, and appears in No. 4, on pp. 1 to 4. In the present issue a still further curtailment has had to be made in order to make room for new matter.

Briefly, it may be stated that to the "Blue Books" compiled in Australia for the Home Government, there succeeded, under Responsible Government, the statistics which each of the departments prepared for itself, State statistical departments being organised principally as collecting agencies of official and general information.

Absence of co-ordination in collection and compilation, due to the organisation, independently, of the various States bureaux, caused difficulties in so combining State statistics as to get a satisfactory statistic for Australia as a whole, and various conferences of State Statisticians did not completely rectify the divergencies that arose.

(i.) *Creation of the Commonwealth Bureau of Census and Statistics.* Constitutionally, matters relating to "Census and Statistics" belong to the Commonwealth, and in 1906, under the authority of the Census and Statistics Act of 1905, providing for the taking of the Census and the collecting of general statistics, the Commonwealth Bureau of Census and Statistics was created. A conference of statistical representatives of Australian States and New Zealand, under the presidency of the Commonwealth Statistician, met in November and December, 1906. For a more or less complete presentation of the affairs of the Commonwealth and of its constituent parts, various desiderata were recognised, and a series of resolutions adopted by the conference. Identity of categories, simultaneity and identity in methods of collection, and uniformity in compilation, were the main features desired. A resumé of the resolutions of this conference is given in Year Book No. 1, pp. 12-16.

2. **Sources of Information.**—Statistical information is furnished (i.) by the State Statistical Bureaux, as a result of direct demand, or through the police and special collectors; (ii.) by Commonwealth and State Departments (see lists of publications in § 2 *infra*); (iii.) in respect of returns of Trade, Customs and Excise, by the Trade and Customs Department; (iv.) by scientific and technical experts, specially requisitioned

## STATISTICAL PUBLICATIONS OF AUSTRALIA.

to write on particular subjects; (v.) by State Statisticians, as officers duly constituted under the Commonwealth Census and Statistics Act; (vi.) and by information supplied compulsorily, on the Commonwealth Statistician's demand.

**3. Maintenance of Secrecy.**—Under no circumstance can information supplied to a statistical office be used against the individual supplying it. All statistical enquiries are strictly impersonal, and the affairs of individuals or individual businesses are never disclosed. No other Government Department can make use of the Statistical departments in order to acquire detailed information otherwise unavailable.

**4. Accuracy Essential.**—The importance of accurate statistical information is emphasised, and the making of untrue statements is heavily penalised.

## § 2. Statistical Publications of Australia.

**1. Introductory.**—The official statistical publications of Australia may be divided bibliographically into two main divisions, viz.:—(1) Commonwealth publications dealing both individually and collectively with the several States of the Commonwealth, and (2) State publications dealing with individual States only. Besides these there are a large number of publications issued regularly, which, though not wholly statistical, necessarily contain a considerable amount of statistical information. These are included in the lists given hereunder, which are revised to 30th November, 1911.

**2. Commonwealth Publications.**—Commonwealth publications may be grouped under two heads, viz.:—(i.) Publications issued by the Commonwealth Statistician, and (ii.) Departmental Reports and Papers.

(i.) *Publications issued by the Commonwealth Statistician.* The following is a list of statistical publications issued from the Commonwealth Bureau of Census and Statistics since its inauguration and up to 31st December, 1911:—

*Finance*—Bulletin No. 1, 1901 to 1907.

Bulletin No. 2, 1901 to 1908.

Bulletin No. 3, 1901 to 1909.

Bulletin No. 4, 1901 to 1910.

*Inquiry into the Cost of Living in Australia, 1910-11.*

*Labour and Industrial Statistics*—Explanatory Memorandum on the Proposed Scheme.

*Population and Vital Statistics*—Bulletin No. 1, Determination of the Population of Australia, 1901 to 1906.

Bulletin No. 2, Commonwealth Demography, 1901 to 1906.

Bulletin No. 7, Commonwealth Demography, 1901 to 1907.

Bulletin No. 13, Commonwealth Demography, 1901 to 1908.

Bulletin No. 19, Commonwealth Demography, 1901 to 1909.

Bulletins Nos. 3 to 6, 9 to 12, 15 to 18, 21 to 24, 26 and 27, Vital Statistics, issued quarterly, 1907 to 1910, and first and second quarters of 1911.

Bulletin No. 8, Vital Statistics for year 1907.

Bulletin No. 14, Vital Statistics for year 1908.

Bulletin No. 20, Vital Statistics for year 1909.

Bulletin No. 25, Vital Statistics for year 1910.

*The Nomenclature of Diseases and of Causes of Death, 1907.* New Edition, 1910.

*Production*—Bulletin No. 1, 1901 to 1906.

Bulletin No. 2, 1901 to 1907.

Bulletin No. 3, 1901 to 1908.

Bulletin No. 4, 1901 to 1909.

*Professional Papers*—The Classification of Diseases and Causes of Death, from the standpoint of the Statistician.

Census Taking—C. H. Wickens, A.I.A.

On the Influence of Infantile Mortality on Birthrate (2 papers).

On the Statistical Opportunities of the Medical Profession.

Tuberculosis Duration Frequency Curves, and the number of existing cases ultimately fatal.

The Problems of Statistics.

The Evolution and Significance of the Census.

Studies in Statistical Representation.

The First Commonwealth Census.

*Railway Statistics*—Report on the Desirability of Improved Statistics of Government Railways in Australia, February, 1909.

*Shipping*—Shipping and Oversea Migration for 1906.

Shipping and Oversea Migration for 1907.

Shipping and Oversea Migration for 1908.

Shipping and Oversea Migration for 1909.

Shipping and Oversea Migration for 1910.

*Social Insurance*—Report to the Hon. the Minister of Trade and Customs.

*Superannuation for the Commonwealth Public Service*—Report to the Hon. the Minister of Home Affairs.

*The Australian Commonwealth*—Its Resources and Production, 1903. New Edition, 1910.

*Trade and Customs*—Trade, and Customs and Excise Revenue for 1906.

Trade, and Customs and Excise Revenue for 1907.

Trade, and Customs and Excise Revenue for 1908.

Trade, and Customs and Excise Revenue for 1909.

Trade, and Customs and Excise Revenue for 1910.

Trade, Shipping, and Oversea Migration—Bulletins Nos. 1 to 58, issued monthly, commencing January, 1907.

*Transport and Communication*—Bulletin No. 1, 1901 to 1906.

Bulletin No. 2, 1901 to 1908.

Bulletin No. 3, 1901 to 1909.

Bulletin No. 4, 1901 to 1910.

*Social Statistics*—Bulletin No. 1, 1907.

Bulletin No. 2, 1908.

Bulletin No. 3, 1909.

*Year Book of the Commonwealth*—No. 1, 1901 to 1907.

No. 2, 1901 to 1908.

No. 3, 1901 to 1909.

No. 4, 1901 to 1910.

(ii.) *Commonwealth Parliamentary and Departmental Reports and Papers.* The following official reports and papers containing statistical matter have been issued since the inauguration of the Commonwealth:—

Australia for Farmers, 1910.

Australia: The Wheat Country.

Budget, 1901-2 to 1911-12.

Chief of the General Staff: Memo. re Defence.

Commonwealth Meteorologist. Climate and Meteorology of Australia; Bulletins 1 to 5; Rainfall Maps of Australia; Professional Papers and Charts (various); Monthly Meteorological Reports, commencing January, 1910.

Contract Immigrants Act 1905 and Immigration Restriction Acts 1901-5: Returns for Years 1902 to 1910.

Director-General of Cadets: Reports to 30th June, 1910.

Director of Naval Forces: Report for 1906.

Electoral Statistical Returns *re* Referendum of 26th April, 1911.

Electoral Statistics of Commonwealth Elections; 1903, 1906, and 1910.

Estimates: 1901-2 to 1911-12.

Fisheries: Reports of the Director on Fishing Experiments carried out by the F.I.S. "Endeavour."

Handbooks of the Territory of Papua.

Inspector-General of Military Forces: Reports, 1905 to 1907. Extracts from Report of 1910.

Invalid and Old-Age Pensions: Statements *re*.

Manufactures Encouragement Act: Return of Bounties Paid.

Memorandum on Australian Military Defence and its progress since Federation.

Memorandum on the Defence of Australia, by Field-Marshal Lord Kitchener.

Military and Naval Forces Lists.

Military Board: Reports, 1905 and 1906.

Naturalisation Act 1903; Returns.

Naval Defence of Australia: Memorandum by Admiral Sir Reginald Henderson.

Organisation and Distribution of the Military Forces.

Papua: Reports for 1904-5 to 1909-10.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

Patents Statistics, 1904 to 1911.

Postal Services Royal Commission.

Postmaster-General's Department: Statement of Business transacted and details of Receipts and Expenditure, 1907, 1908 and 1909.

Public Service Commissioner: Reports, 1901-4 and 1905 to 1910, and Public Service Lists, 1903 to 1911.

Representation Act 1905: Returns.

Royal Commission on Tasmanian Customs Leakage.

Sugar: Statistics, 1901-2 to 1910-11 *re* White and Black Labour, Production, Duties, Bounties, etc.

Trade and Customs Returns, 1903 to 1905; compiled by the New South Wales Government Statistician for the Minister for Customs.

Treasurer's Statements and Reports of Auditor-General, 1901-2 to 1909-10.

Treasury Statements of Receipts and Expenditure, issued quarterly in the *Commonwealth Gazette*.

Tropical Diseases: Report by Dr. Breinl.

3. **State Publications.**—The chief statistical publications of each State issued since Federation may be most conveniently grouped under the following heads, viz.:—(a) Publications issued by the Government Statist, (b) parliamentary and departmental reports and papers, and (c) reports and statements of local and public bodies. These are set out hereunder for each State:—

(i.) **New South Wales.**—(a) *Publications by Government Statistician:*—

The Wealth and Progress of New South Wales, 1900-1.

The Seven Colonies of Australasia, 1901-2.

A Statistical Account of Australia and New Zealand, 1902-3, 1903-4.

The Official Year Book of New South Wales, 1904-5, 1905-6, 1907-8, 1908-9, 1909-10.



Six States of Australia and New Zealand (annual statistics), 1901 to 1905.  
 Monthly Statistical Bulletin, 1905 to October 1911.  
 Statistical Registers, 1901 to 1909, and 1910 (parts).  
 Census of New South Wales, 1901.  
 Vital Statistics (annual), 1901 to 1910; and monthly issues to September, 1911.  
 Agricultural and Live-stock Statistics, 1901 to 1911.  
 Statistical View of the Progress of New South Wales during 50 years, 1856 to 1906.  
 Friendly Societies' Experience, New South Wales, 1900-1908.  
 Comparative Legislation relating to the Industrial Classes.  
 Annual Reports on Agricultural, Dairying, and Pastoral Industries, on Manu-  
 factories and Works, and on Value of Production.

(b) *Departmental Papers:—*

Annual Reports of—

Aborigines	Inspector under Factories and Shops Acts.
Australian Museum	Labour Commissioners
Board of Public Health	Leprosy Board
Chief Commissioner of Railways	Minister of Public Instruction
Chief Medical Officer	National Art Gallery
Comptroller-General of Prisons	Pharmacy Board
Department of Agriculture	Public Library
Department of Crown Lands	Public Service Board
Department of Mines	Registrar of Friendly Societies, Building
Department of Police	Societies, and Trade Unions
Department of Public Works	Registrar-General
Director of Botanical Gardens and Domains	State Children's Relief Board
Director of Labour	State Debt Commissioners
Fisheries Board	Superintendent of Carpenterian Reformat'ry
Forestries Department	Technological Museums
Government Savings Bank	University of Sydney
Industrial Schools	Western Land Board.
Inspector-General of Insane	
The Estimates.	
Parliamentary Papers (miscellaneous); Reports of Committees, Commissions	
Conferences, etc.	
Public Accounts and Report of the Auditor-General.	
General Election 1910. Double Voting. Synopsis of the Voting.	
State Contracts for the Public Service.	
Agricultural Gazette (monthly).	
Records of the Geological Survey.	

(c) *Reports and Statements of Local Bodies:—*

Annual Statements of Municipalities	Metropolitan Board of Water Supply and
Fire Brigades Board	Sewerage
Hospitals	Sydney Harbour Trust Commissioners
Hunter District Water Supply and Sewerage	Town Clerk of the City of Sydney.
Board	

(iii.) *Victoria.—(a) Publications by the Government Statist:—*

Statistical Registers, 1901 to 1909, and 1910 (parts).  
 The Victorian Year Books, 1902 to 1909-10, and 1910-11 (parts).  
 Quarterly Statistical Abstracts, 1904 to 30th June, 1911.  
 Quarterly Returns of Vital Statistics, 1901 to 30th June, 1911.

Monthly Returns of Oversea Imports and Exports, 1901 to September, 1911.  
 Statistics of Manufactories, Works, etc., 1901 to 1910.  
 Agricultural Statistics, 1900-1 to 1910-11.  
 Australasian Statistics, 1901-2, with Summaries for Previous Years.  
 The First Fifty Years of Responsible Government in Victoria, 1856 to 1906.  
 Census of Victoria, 1901.  
 Annual Reports on Agricultural, Dairying, and Pastoral Industries, and on Value of Production.

(b) *Departmental Papers:—*

Annual Reports of—

Actuary for Friendly Societies on Trade Unions	Inspector of Neglected Children and Reformatory Schools
Board for the Protection of Aborigines	Inspector-General of Penal Establishments and Gaols
Board of Public Health	Inspector-General of Savings Banks
Chief Inspector of Explosives	Lands Purchase Management Board
Conservator of Forests	Licenses Reduction Board
Council of Judges	Marine Board of Victoria
Department of Agriculture	Minister of Public Instruction
Department of Crown Lands and Survey	Public Service Commissioner
Government Astronomer	Registrar of Friendly Societies
General Manager of State Coal Mines	Railways Commissioners
Indeterminate Sentences Board	Secretary for Mines
Inspector of Charitable Institutions	State Rivers and Water Supply Commission
Inspector of Factories, Workrooms and Shops	Trustees of the Public Library, Museums, and National Gallery
Inspector-General of the Insane	Vice-Chancellor of Melbourne University.
Inspector of Inebriates' Institutions	

Accounts of the Trustees of Agricultural Colleges and the Council of Agricultural Education.

The Budget.

Returns under the Banks and Currency Act 1890, the Companies Act 1890, and the Electric Light and Power Act 1896.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

Statement of Expenditure under the Constitution Statute.

The Estimates.

Treasurer's Statement and Report of the Auditor-General.

Agricultural Journal (monthly).

Register of Teachers and Register of Schools.

(c) *Reports of Local Bodies:—*

Annual Reports of the Melbourne Harbour Trust Commission	Geelong Municipal Waterworks Trust Hospitals
Annual Reports of the Fire Brigades Board	Statement of Accounts of the Melbourne and Metropolitan Board of Works.
Annual Statements of Municipal and Shire Councils	

(iii.) *Queensland.—(a) Publications by Government Statistician and Registrar-General:—*

The Queensland Official Year Book, 1901.

The Census of 1901.

A.B.C. of Queensland Statistics, 1905 to 1911.

Vital Statistics (annual), 1901 to 1909; and monthly issues to September, 1911.  
 Statistical Registers, 1901 to 1910.  
 Stock List, 1901 to 1910.  
 Annual Reports on Agricultural, Dairying, and Pastoral Statistics.

(b) *Departmental Papers:—*

Annual Reports of the—

Agent-General	Inspector of Hospitals for the Insane
Benevolent Asylums	Inspector of Orphanages
Bureau of Sugar Experiment Stations	Manager of the Government Savings Bank
Chief Protector of Aborigines	Marine Department
Chief Inspector of Factories and Shops	Medical Officers of Hospitals
Chief Inspector of Machinery & Scaffolding	Officer in Charge, Government Relief
Commissioner for Public Health	Official Trustees in Insolvency
Commissioner of Income Tax	Pacific Island Immigration
Commissioner of Police	Police Investment Board
Commissioner for Railways	Public Service Board
Comptroller-General of Prisons	Registrar of Friendly Societies, Building
Curator of Intestate Estates	Societies, and Trade Unions
Department of Agriculture and Stock	Registrar of Friendly Societies and Official
Department of Public Lands	Valuer on the Quinquennial Valuation
Department of Public Works	of Friendly Societies
Director of Forests	Secretary for Public Instruction
Director of Labour	Trustees of the Agricultural Bank
Engineer for Harbours and Rivers	Trustees of the National Art Gallery
Govt. Life Insurance and Annuity Business	Trustees of the Public Library
Hydraulic Engineer on Water Supply	Under-Secretary for Mines.
Immigration Agent	University of Queensland.
Blue Book.	
The Estimates.	
Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.	
Reports of the Auditor-General.	
Treasurer's Financial Statement.	
Reports of the Geological Survey.	

(c) *Reports and Statements of Local Bodies:—*

Brisbane Board of Waterworks.  
 Bundaberg Harbour Board.  
 Engineer for Harbours and Rivers.  
 Hospitals.  
 Annual Statements of Municipalities.  
 Metropolitan Water and Sewerage Board.

(iv.) *South Australia.—(a) Publications by the Under-Secretary and Government Statist:—*

Statistical Registers, 1901 to 1909, and 1910 (parts).  
 Monthly Returns of Births and Deaths, 1901 to June, 1911.  
 Monthly Returns of Vital Statistics, 1901 to September, 1911.  
 The Census of 1901.  
 Blue Book.  
 Statistical Summary of South Australia from its foundation, 1836 to 1909.  
 Annual Reports on Manufactories and Works, Live Stock, Wheat Harvest, and Agricultural Statistics.

*(b) Departmental Papers :—*

## Annual Reports of the—

Actuary on Friendly Societies (1900-1904)	Governors of the Public Library, Museum, and Art Gallery
Agent-General	Hospital for the Insane
Audit-Commissioner	Inspector of Factories
Chief Inspector of Stock	Inspector of Fisheries
Commissioner of Police	Marine Board
Commissioner of Railways	Minister for Agriculture
Commissioners of the National Park	Minister for Education
Conservator of Forests	Public Service Superannuation Board
Department of Agriculture	Registrar of Births, Deaths, and Marriages
Department of Public Works	Registrar of Trade Unions
Destitute Board	State Children's Council
Gaols and Prisons	Surveyor-General
Government Astronomer	Trustees of the Savings Bank.
Government Resident of Northern Territory	

Parliamentary Papers miscellaneous); Reports of Committees, Commissions,  
Conferences, etc.

The Estimates.

Financial Statement of the Treasurer.

Mining Operations; Half-Yearly Reviews, 1904 to 1911.

Records of Geological Survey.

Journal of the Department of Agriculture (monthly).

*(c) Reports and Statements of Local Bodies :—*

Hospitals.

Schools of Mines and Industries.

Fire Brigades Boards.

Port Adelaide Corporation.

Municipal Tramways Trust.

Municipalities.

*(v.) Western Australia.—(a) Publications by Government Statistician :—*

The Census of 1901.

Statistical Registers, 1901 to 1909 and 1910 (parts).

Monthly Statistical Abstracts, 1901 to August, 1911.

Year Books of Western Australia, 1900-03, 1902-4, 1905 (part).

Quarterly and Annual Reports on Population and Vital Statistics.

Crop and Live Stock Returns.

Blue Book.

Statistical View of 82 years' progress in Western Australia, 1829 to 1910.

Annual Reports on Agricultural, etc., Statistics.

*(b) Departmental Papers :—*

## Annual Reports of the—

Aborigines Department	Commissioner of Police
Agent-General	Commissioner of Railways
Agricultural Bank	Commissioner of Taxation
Art Galleries	Comptroller-General of Prisons
Chief Inspector of Explosives	Department of Agriculture
Chief Inspector of Factories	Department of Lands and Surveys
Chief Inspector of Fisheries	Department of Mines

Department of Public Health  
 Department of Public Works  
 Department of Woods and Forests  
 Education Department  
 Geological Survey  
 Government Analyst  
 Government Astronomer  
 Government Labour Bureau  
 Government Savings Bank  
 Harbour and Light Department  
 Inspector-General of Insane  
 Lands Titles Department  
 Museum and Art Gallery  
 Public Library

Principal Medical Officer on Medical,  
 Health, Factories, Early Closing, Vac-  
 cination and Quarantine.  
 Public Service Commissioner  
 Registrar of Friendly Societies  
 Registrar of Friendly Societies in connec-  
 tion with Trade Unions  
 Stock Department  
 Superintendent of Charities and Inspector  
 of Industrial and Reformatory Schools  
 Surveyor-General  
 The Industrial Conciliation and Arbitration  
 Act 1902, by Registrar of Friendly  
 Societies.

Parliamentary Papers (miscellaneous) ; Reports of Committees, Commissions,  
 Conferences, etc.

The Estimates.

Public Accounts and Report of the Auditor-General.

Bulletins of the Department of State Medicine and Public Health.

Bulletins of the Geological Survey.

(c) *Reports and Statements of Local Bodies :—*

Cemetery Boards  
 Fire Brigades  
 Fremantle Harbour Trust Commissioners  
 Fremantle Municipal Tramways and  
 Electric Lighting Board

Metropolitan Waterworks Board  
 Municipalities, Road Boards, and Boards  
 of Health  
 Public Hospitals  
 Waterworks Boards (country).

(vi.) **Tasmania.** (a) *Publications by Government Statistician and Registrar-General :—*

The Census of 1901.

Statistical Registers, 1901 to 1909-10.

Reports on Vital Statistics and Migration (annual), 1901 to 1910 ; and monthly  
 issues to September, 1911.

Reports on Agricultural and Live Stock Statistics, 1901 to 1910-11.

Statistical Summaries, 1901 to 1907.

Gold-yield for 1908 and previous 10 years.

Annual Reports on Agricultural, etc., Statistics.

(b) *Departmental Papers :—*

Annual Reports of the—

Agent-General  
 Charitable Grants Department  
 Chief Inspector of Stock  
 Commissioner of Taxes  
 Department of Agriculture  
 Department of Education  
 Department of Mines  
 Department of Neglected Children  
 Department of Public Health  
 Engineer-in-Chief of Public Works  
 Explosives Department  
 Fire Brigade Board  
 General Manager of Government Railways

Hobart and Launceston Gaols  
 Inspector of Machinery  
 Lands and Survey Department  
 Museum and Botanical Gardens  
 Police Department  
 Public Library  
 Public Service Board  
 Recorder of Titles  
 Registrar of Friendly Societies and Trade  
 Unions  
 Savings Bank  
 Secretary for Mines  
 University of Tasmania

The Budget.

The Estimates.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.  
 Public Debts Sinking Fund.  
 Report of the Auditor-General.  
 Financial Statement of the Treasurer.  
 Geological Survey Bulletins.  
 Progress of the Mineral Industry (quarterly).

(c) *Reports and Statements of Local Bodies :—*

Country Libraries	Industrial Schools
Harbour Trusts	Life Assurance Societies
Hobart Drainage Board	Marine Boards
Hospitals	Municipalities.

### § 3. Bibliography of Recent General Works on Australia.

While not exhaustive, it is hoped that the accompanying list of works dealing with Australia and Australian affairs generally, may prove of some service. The list refers to works published since the year 1901.

- CLARK, A. T. *Australian Constitutional Law*. Melbourne, 1905.  
 CLARK, VICTOR S. *The Labour Movement in Australasia*. London, 1906.  
 D'AUNET, B. *L'Aurore Australe*. Melbourne, 1905; Paris, 1907.  
 FAVENC, E. *Explorers of Australia*. Melbourne, 1908.  
 FRASER, J. FOSTER. *Australia: The Making of a Nation*. London, 1910.  
 GORDON AND GOTCH. *Australian Handbook. Annual*. London.  
 GREGORY, J. M. *The Dead Heart of Australia*. London, 1906. *Australia and New Zealand* (in Stanford's *Compendium of Geography and Travel*). London, 1907.  
 GREY, J. G. *Australasia, Old and New*. London, 1901.  
 HOWITT, A. W. *The Native Tribes of South East Australia*. London, 1904.  
 JOHNS, F. *Notable Australians*. Adelaide and London, 1908.  
 KEENAN, J. J. *Commonwealth of Australia Inaugural Celebrations*. Sydney, 1907.  
 MAIDEN, J. H. *Sir Joseph Banks, the Father of Australia*. Sydney, 1909.  
 METIN, A. *Le Socialisme sans doctrines: la question ouvrière et la question agraire en Australie et Nouvelle Zélande*. Paris, 1901.  
 MOORE, W. H. *The Constitution of the Commonwealth of Australia*. London, 1902. Second Edition. Melbourne, 1910.  
 MORGAN, B. H. *The Trade and Industry of Australia*. London, 1909.  
 NELSON, W. *Foster Fraser's Fallacies*. Sydney, 1910.  
 PULSFORD, E. *Commerce and the Empire*. London, 1903.  
 QUICK, HON. SIR J., AND GARRAN, R. R. *The Annotated Constitution of the Australian Commonwealth*. Sydney, 1901.  
 QUICK, HON. SIR J., AND GROOM, HON. L. E. *The Judicial Power of the Commonwealth*. Melbourne, 1904.  
 REEVES, W. P. *State Experiments in Australia and New Zealand*. 2 vols. London, 1902.  
 ROGERS, J. D. *Australia* (in Lucas's *Historical Geography of the British Colonies*). Oxford, 1907.  
 ROWLAND, P. F. *The New Nation*. London, 1903.  
 SCHACHNER, R. *Australien in Politik, Wirtschaft, Kultur*. Bd. I. Jena, 1909; do. Bd. II. Jena, 1911.  
 SCOTT, ERNEST. *Terre Napoléon: A History of French Explorations and Projects in Australia*. London, 1910.  
 SCOTT, R. F. *The Voyage of the Discovery*. 2 vols. London, 1905.  
 SEARCY, A. *In Australian Tropics*. London, 1907.  
 SCOTTISH AGRICULTURAL COMMISSION'S REPORT. *Australia: Its Land, Conditions, and Prospects*. Edinburgh, 1911.  
 SPENCE, W. G. *Australia's Awakening*. Sydney, 1909.  
 SPENCER, W. B., AND GILLEN, F. J. *The Northern Tribes of Central Australia*. London 1904.  
 ST. LEDGER, A. *Australian Socialism*. London 1909.  
 TURNER, H. G. *First Decade of the Australian Commonwealth*. London, 1911.  
 VOSSION, L. *L'Australie Nouvelle et son avenir*. Paris, 1902.  
 WISE, B. R. *Commonwealth of Australia*. London, 1909.  
 YEAR BOOK OF AUSTRALIA. *Annual*. Sydney

## SECTION II.

DISCOVERY, COLONISATION, AND FEDERATION OF  
AUSTRALIA.

## § 1. Early Knowledge of Australia.

A brief, though fairly comprehensive, account of the discovery and early knowledge of Australia was given in Year Book No. 1 (pp. 44 to 51). This account appeared in a condensed form in Year Books Nos. 2, 3, and 4. Bibliographical references to the subject were also given in Year Book No. 1 (p. 49). Exigencies of space prevent the inclusion of any further reference to this subject in the present issue.

## § 2. The Taking Possession of Australia.

Reference was made to the more important facts relating to the taking possession and annexation of Australia in each of the previous issues of this book: See preferably Year Book No. 4 (pp. 15 and 16). In so far as the annexation of the eastern parts is concerned, a full historical account of the period may be found in the "Historical Records of New South Wales," Vol. I., parts 1 and 2. For an account of the annexation of Western Australia, reference may be made to the West Australian Year Book 1905, Part 1.

## § 3. The Creation of the Several Colonies.

1. **Introduction.**—A historical summary of the facts relating to the creation of the several colonies, the separation of Victoria and Queensland, and the changes in the boundaries of certain of the colonies has appeared in previous issues of this book: See Year Book No. 4 (pp. 16 to 23). The main facts in this connection may be traced by reference to the maps on pages 17 and 18.

2. **No further Creation of Colonies after 1859.**—Since the separation of Queensland in 1859 no other creation of colonies has taken place in Australia, though the boundaries of New South Wales, Queensland, and South Australia were altered later, and the control of the Northern Territory was transferred from South Australia to the Commonwealth in 1911. The dates of foundation of the Australasian colonies, and their areas at the close of 1859, were as shewn in the following table:—

### DATES OF FOUNDATION OF AUSTRALASIAN COLONIES AND AREAS AS AT END OF 1859.

Colony.	Date of Annexation.	Date of Creation.	Date of First Permanent Settlement.	Area. Square Miles.
New South Wales ... ..	1770	1786	1788	1,020,412
Tasmania ... ..	1788	1825	1803	26,215
South Australia ... ..	1788	1834	1836	309,850
Victoria ... ..	1770	1851	1834	87,884
Queensland ... ..	1770	1859	1824	554,300
Western Australia ... ..	1829	1829	1829	975,920
New Zealand ... ..	1840	1841	1814	104,471 <sup>1</sup>

1. By proclamation dated 10th June, 1901, the area of the Dominion was increased by 280 square miles, making it now 104,751 square miles, by the inclusion of the Cook Group and other islands.

3. **Australasia, 1863 to 1900.**—The immense area generally known as Australasia had, by 1863, been divided into seven distinct colonies, the areas of which are shown below. The area of the Northern Territory which is now under the exclusive jurisdiction of the Commonwealth is given separately.

On the 1st January, 1901, the colonies mentioned above, with the exception of New Zealand, were federated under the name of the "Commonwealth of Australia," the designation of "Colonies" being at the same time changed into that of "States." The total area of the Commonwealth is, therefore, 2,974,581 square miles; the dates of creation and the areas of the separate colonies, as determined on the final adjustment of their boundaries, are shown in the following table:—

### DATES OF CREATION AND AREAS OF THE SEVERAL COLONIES.

Colony.	Year of For- mation into Separate Colony.	Present Area in Square Miles.	Colony.	Year of For- mation into Separate Colony.	Present Area in Square Miles.
New South Wales ...	1786	310,372 <sup>1</sup>	New Zealand ...	1841	104,751
Tasmania ... ..	1825	26,215	Victoria ... ..	1851	87,884
Western Australia ...	1829	975,920	Queensland ... ..	1859	670,500
South Australia (proper)	1834	380,070	Northern Territory	1863	523,620
Commonwealth ... ..	...	...	2,974,581 square miles.		
Australasia ... ..	...	...	3,079,332 square miles.		

1. Now includes Federal Capital Territory, approximately 900 sq. miles.

4. **British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or *Papua*, finally annexed by the British Government in 1884. This territory was for a number of years administered by the Queensland Government, but was transferred to the Commonwealth by proclamation on the 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles. More extended reference to this dependency of the Commonwealth will be found in Section xxix.

5. **Transfer of the Northern Territory to the Commonwealth.**—On the 7th December, 1907, the Commonwealth and the State of South Australia entered into an agreement for the surrender to and acceptance by the Commonwealth of the Northern Territory, subject to approval by the Parliaments of the Commonwealth and the State. This approval was given by the South Australian Parliament under the Northern Territory



Surrender Act 1907 (assented to on the 14th May, 1908), and by the Commonwealth Parliament under the Northern Territory Acceptance Act 1910 (assented to on the 16th November, 1910). The Territory accordingly was transferred by Proclamation to the Commonwealth on the 1st January, 1911. Further information may be found in the section of this book on "*The Northern Territory.*"

#### § 4. The Exploration of Australia.

A fairly complete, though brief, account of the Exploration of Australia was given in Year Book No. 2 (pp. 20 to 39). A brief summary of the more important facts relating to the subject was given in Year Books Nos. 3 and 4. Maps shewing the progress of Australian exploration may be found on page 35 hereof.

#### § 5. The Constitutions of the States.

A brief and condensed statement of the constitutional history of the several States, shewing how their present Constitutions have been built up, may be found in Section II. of the second, third, and fourth issues of the Year Book. See No. 4, pp. 27-32.

#### § 6. The Federal Movement in Australia.

A summary was given in Year Book No. 1 (pp. 17 to 21) of the "Federal Movement in Australia" from its inception to its consummation; a synopsis thereof was given in Year Books Nos. 2, 3, and 4. See No. 4, pp. 32 to 37.

#### § 7. Creation of the Commonwealth.

1. **The Act.**—The Commonwealth of Australia Constitution Act, 63 and 64 Vic., Chapter 12, namely, an Act to constitute the Commonwealth of Australia, was shewn *in extenso* in Year Book No. 1. In the Year Books Nos. 2, 3 and 4, a summary of the Act was given. As two amending Acts, namely, the Constitution Alteration (Senate Elections) Act 1906, and the Constitution Alteration (State Debts) Act 1909, have been passed, it has been thought desirable to insert the Act, as amended, in full.

##### THE COMMONWEALTH OF AUSTRALIA CONSTITUTION ACT.

63 & 64 VICT., CHAPTER 12.

*An Act to constitute the Commonwealth of Australia. [9th July, 1900.]*

**W**HEREAS the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, humbly relying on the blessing of Almighty God, have agreed to unite in one indissoluble Federal Commonwealth under the Crown of the United Kingdom of Great Britain and Ireland, and under the Constitution hereby established:

And whereas it is expedient to provide for the admission into the Commonwealth of other Australasian Colonies and possessions of the Queen:

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. This Act may be cited as the Commonwealth of Australia Constitution Act.
2. The provisions of this Act referring to the Queen shall extend to Her Majesty's heirs and successors in the sovereignty of the United Kingdom.
3. It shall be lawful for the Queen, with the advice of the Privy Council, to declare by proclamation that, on and after a day therein appointed, not being later than one

year after the passing of this Act, the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, and also, if Her Majesty is satisfied that the people of Western Australia have agreed thereto, of Western Australia, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia. But the Queen may, at any time after the proclamation, appoint a Governor-General for the Commonwealth.

4. The Commonwealth shall be established, and the Constitution of the Commonwealth shall take effect, on and after the day so appointed. But the Parliaments of the several colonies may at any time after the passing of this Act make any such laws, to come into operation on the day so appointed, as they might have made if the Constitution had taken effect at the passing of this Act.

5. This Act, and all laws made by the Parliament of the Commonwealth under the Constitution, shall be binding on the courts, judges, and people of every State and of every part of the Commonwealth, notwithstanding anything in the laws of any State; and the laws of the Commonwealth shall be in force on all British ships, the Queen's ships of war excepted, whose first port of clearance and whose port of destination are in the Commonwealth.

6. "The Commonwealth" shall mean the Commonwealth of Australia as established under this Act.

"The States" shall mean such of the colonies of New South Wales, New Zealand, Queensland, Tasmania, Victoria, Western Australia, and South Australia, including the northern territory of South Australia, as for the time being are parts of the Commonwealth, and such colonies or territories as may be admitted into or established by the Commonwealth as States; and each of such parts of the Commonwealth shall be called "a State."

"Original States" shall mean such States as are parts of the Commonwealth at its establishment.

7. The Federal Council of Australasia Act 1885 is hereby repealed, but so as not to affect any laws passed by the Federal Council of Australasia and in force at the establishment of the Commonwealth.

Any such law may be repealed as to any State by the Parliament of the Commonwealth, or as to any colony not being a State by the Parliament thereof.

8. After the passing of this Act the Colonial Boundaries Act 1895 shall not apply to any colony which becomes a State of the Commonwealth; but the Commonwealth shall be taken to be a self-governing colony for the purposes of that Act.

9. The Constitution of the Commonwealth shall be as follows:—

#### THE CONSTITUTION.

This Constitution is divided as follows:—

Chapter I.—The Parliament:—

Part I.—General.

Part II.—The Senate.

Part III.—The House of Representatives.

Part IV.—Both Houses of Parliament.

Part V.—Powers of the Parliament.

Chapter II.—The Executive Government.

Chapter III.—The Judicature.

Chapter IV.—Finance and Trade.

Chapter V.—The States.

Chapter VI.—New States.

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The Schedule.

#### CHAPTER I.—THE PARLIAMENT.

##### PART I.—GENERAL.

1. The legislative power of the Commonwealth shall be vested in a Federal Parliament, which shall consist of the Queen, a Senate, and a House of Representatives, and which is hereinafter called "The Parliament," or "The Parliament of the Commonwealth."

2. A Governor-General appointed by the Queen shall be Her Majesty's representative in the Commonwealth, and shall have and may exercise in the Commonwealth during the Queen's pleasure, but subject to this Constitution, such powers and functions of the Queen as Her Majesty may be pleased to assign to him.

3. There shall be payable to the Queen out of the Consolidated Revenue fund of the Commonwealth, for the salary of the Governor-General, an annual sum which, until the Parliament otherwise provides, shall be ten thousand pounds.

The salary of a Governor-General shall not be altered during his continuance in office.

4. The provisions of this Constitution relating to the Governor-General extend and apply to the Governor-General for the time being, or such person as the Queen may appoint to administer the Government of the Commonwealth; but no such person shall be entitled to receive any salary from the Commonwealth in respect of any other office during his administration of the Government of the Commonwealth.

5. The Governor-General may appoint such times for holding the sessions of the Parliament as he thinks fit, and may also from time to time, by Proclamation or otherwise, prorogue the Parliament, and may in like manner dissolve the House of Representatives.

After any general election the Parliament shall be summoned to meet not later than thirty days after the day appointed for the return of the writs.

The Parliament shall be summoned to meet not later than six months after the establishment of the Commonwealth.

6. There shall be a session of the Parliament once at least in every year, so that twelve months shall not intervene between the last sitting of the Parliament in one session and its first sitting in the next session.

## PART II.—THE SENATE.

7. The Senate shall be composed of senators for each State, directly chosen by the people of the State, voting, until the Parliament otherwise provides, as one electorate.

But until the Parliament of the Commonwealth otherwise provides, the Parliament of the State of Queensland, if that State be an Original State, may make laws dividing the State into divisions and determining the number of senators to be chosen for each division, and in the absence of such provision the State shall be one electorate.

Until the Parliament otherwise provides there shall be six senators for each Original State. The Parliament may make laws increasing or diminishing the number of senators for each State, but so that equal representation of the several Original States shall be maintained and that no Original State shall have less than six senators.

The senators shall be chosen for a term of six years, and the names of the senators chosen for each State shall be certified by the Governor to the Governor-General.

8. The qualification of electors of senators shall be in each State that which is prescribed by this Constitution, or by the Parliament, as the qualification for electors of members of the House of Representatives; but in the choosing of senators each elector shall vote only once.

9. The Parliament of the Commonwealth may make laws prescribing the method of choosing senators, but so that the method shall be uniform for all the States. Subject to any such law, the Parliament of each State may make laws prescribing the method of choosing the senators for that State.

The Parliament of a State may make laws for determining the times and places of elections of senators for the State.

10. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State, for the time being, relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections of senators for the State.

11. The Senate may proceed to the despatch of business, notwithstanding the failure of any State to provide for its representation in the Senate.

12. The Governor of any State may cause writs to be issued for elections of senators for the State. In case of the dissolution of the Senate the writs shall be issued within ten days from the proclamation of such dissolution.

13. As soon as may be after the Senate first meets, and after each first meeting of the Senate following a dissolution thereof, the Senate shall divide the senators chosen for each State into two classes, as nearly equal in number as practicable; and the places of the senators of the first class shall become vacant at the expiration of [the third year] *three years*<sup>1</sup>, and the places of those of the second class at the expiration of [the sixth year] *six years*<sup>1</sup> from the beginning of their term of service; and afterwards the places of senators shall become vacant at the expiration of six years from the beginning of their term of service.

The election to fill vacant places shall be made [in the year at the expiration of which] *within one year before*<sup>1</sup> the places are to become vacant.

For the purposes of this section the term of service of a senator shall be taken to begin on the first day of [January] *July*<sup>1</sup> following the day of his election, except in the cases of the first election and of the election next after any dissolution of the Senate, when it shall be taken to begin on the first day of [January] *July*<sup>1</sup> preceding the day of his election.<sup>2</sup>

14. Whenever the number of senators for a State is increased or diminished, the Parliament of the Commonwealth may make such provision for the vacating of the places of senators for the State as it deems necessary to maintain regularity in the rotation.

15. If the place of a senator becomes vacant before the expiration of his term of service, the Houses of Parliament of the State for which he was chosen shall, sitting and voting together, choose a person to hold the place until the expiration of the term, or until the election of a successor as hereinafter provided, whichever first happens. But if the Houses of Parliament of the State are not in session at the time when the vacancy is notified, the Governor of the State, with the advice of the Executive Council thereof, may appoint a person to hold the place until the expiration of fourteen days after the beginning of the next session of the Parliament of the State, or until the election of a successor, whichever first happens.

At the next general election of members of the House of Representatives, or at the next election of senators for the State, whichever first happens, a successor shall, if the term has not then expired, be chosen to hold the place from the date of his election until the expiration of the term.

The name of any senator so chosen or appointed shall be certified by the Governor of the State to the Governor-General.

16. The qualifications of a senator shall be the same as those of a member of the House of Representatives.

17. The Senate shall, before proceeding to the despatch of any other business, choose a senator to be the President of the Senate; and as often as the office of President becomes vacant the Senate shall again choose a senator to be the President.

The President shall cease to hold his office if he ceases to be a senator. He may be removed from office by a vote of the Senate, or he may resign his office or his seat by writing addressed to the Governor-General.

18. Before or during any absence of the President, the Senate may choose a senator to perform his duties in his absence.

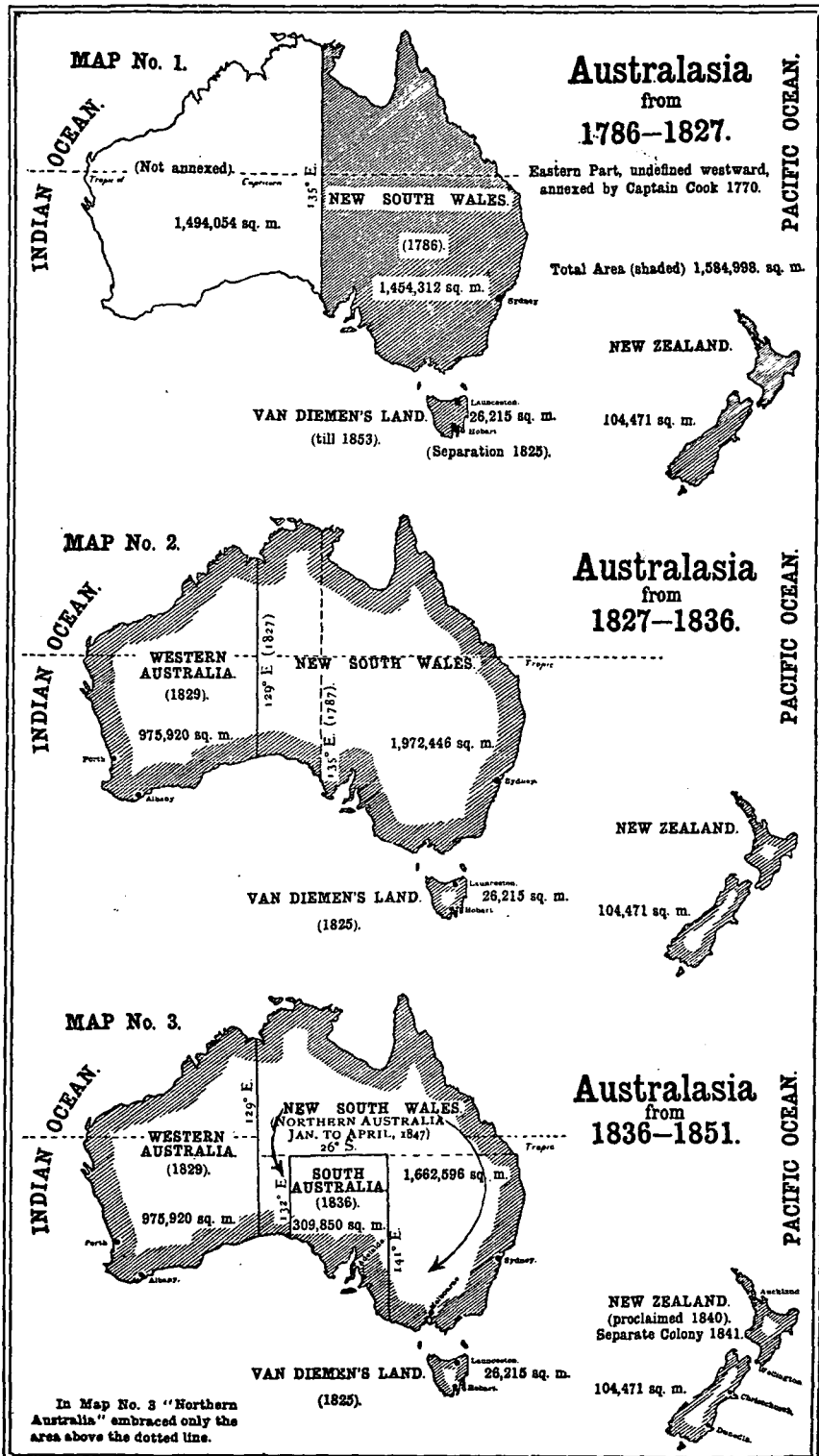
1. As amended by section 2 of the Constitution Alteration (Senate Elections) 1906. The words in square brackets have been repealed; amendments are shewn in italics.

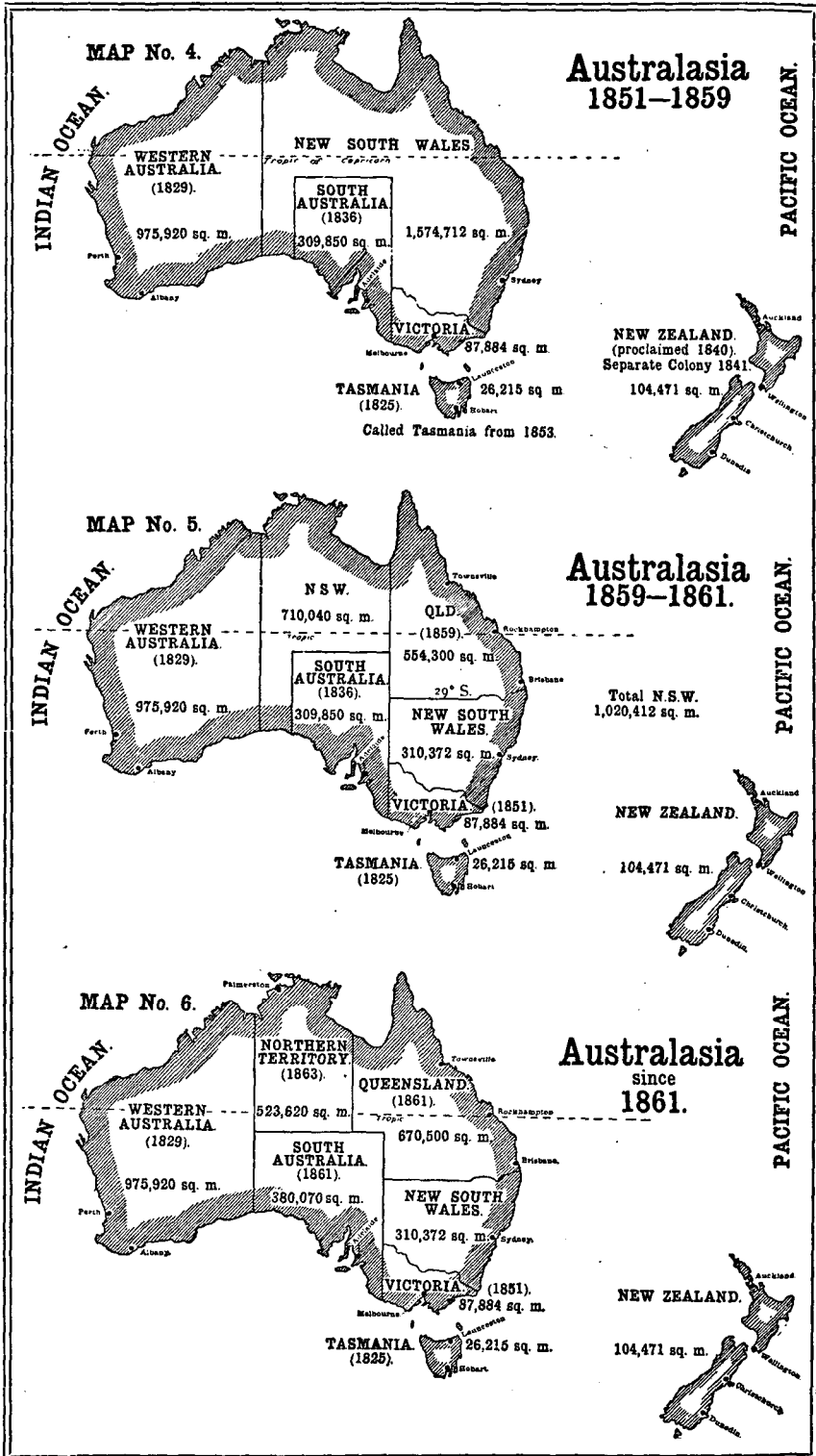
2. Under sections 3 and 4, the Constitution Alteration (Senate Elections) 1906, it was also provided that—

(a) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and nine are extended until the thirtieth day of June One thousand nine hundred and ten.

(b) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and twelve are extended until the thirtieth day of June One thousand nine hundred and thirteen.

(c) This Act shall not be taken to alter the time of beginning of the term of service of any senator elected in the year One thousand nine hundred and six.





19. A senator may, by writing addressed to the President, or to the Governor-General if there is no President or if the President is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

20. The place of a senator shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the Senate, fails to attend the Senate.

21. Whenever a vacancy happens in the Senate, the President, or if there is no President or if the President is absent from the Commonwealth the Governor-General, shall notify the same to the Governor of the State in the representation of which the vacancy has happened.

22. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the senators shall be necessary to constitute a meeting of the Senate for the exercise of its powers.

23. Questions arising in the Senate shall be determined by a majority of votes, and each senator shall have one vote. The President shall in all cases be entitled to a vote; and when the votes are equal the question shall pass in the negative.

### PART III.—THE HOUSE OF REPRESENTATIVES.

24. The House of Representatives shall be composed of members directly chosen by the people of the Commonwealth, and the number of such members shall be, as nearly as practicable, twice the number of the senators.

The number of members chosen in the several States shall be in proportion to the respective numbers of their people, and shall, until the Parliament otherwise provides, be determined, whenever necessary, in the following manner:—

- (i.) A quota shall be ascertained by dividing the number of the people of the Commonwealth, as shown by the latest statistics of the Commonwealth, by twice the number of the senators:
- (ii.) The number of members to be chosen in each State shall be determined by dividing the number of the people of the State, as shown by the latest statistics of the Commonwealth, by the quota; and if on such division there is a remainder greater than one-half of the quota, one more member shall be chosen in the State.

But notwithstanding anything in this section, five members at least shall be chosen in each Original State.

25. For the purposes of the last section, if by the law of any State all persons of any race are disqualified from voting at elections for the more numerous House of the Parliament of the State, then, in reckoning the number of the people of the State or of the Commonwealth, persons of that race resident in that State shall not be counted.

26. Notwithstanding anything in section twenty-four, the number of members to be chosen in each State at the first election shall be as follows:—

New South Wales	...	23	South Australia	...	6
Victoria	...	20	Tasmania	...	5
Queensland	...	8			

Provided that if Western Australia is an Original State, the numbers shall be as follows:—

New South Wales	...	26	South Australia	...	7
Victoria	...	23	Western Australia	...	5
Queensland	...	9	Tasmania	...	5

27. Subject to this Constitution, the Parliament may make laws for increasing or diminishing the number of the members of the House of Representatives.

28. Every House of Representatives shall continue for three years from the first meeting of the House, and no longer, but may be sooner dissolved by the Governor-General.

29. Until the Parliament of the Commonwealth otherwise provides, the Parliament of any State may make laws for determining the divisions in each State for which

members of the House of Representatives may be chosen, and the number of members to be chosen for each division. A division shall not be formed out of parts of different States.

In the absence of other provision, each State shall be one electorate.

30. Until the Parliament otherwise provides, the qualification of electors of members of the House of Representatives shall be in each State that which is prescribed by the law of the State as the qualification of electors of the more numerous House of Parliament of the State; but in the choosing of members each elector shall vote only once.<sup>1</sup>

31. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State for the time being relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections in the State of members of the House of Representatives.

32. The Governor-General in Council may cause writs to be issued for general elections of members of the House of Representatives.

After the first general election, the writs shall be issued within ten days from the expiry of a House of Representatives or from the proclamation of a dissolution thereof.

33. Whenever a vacancy happens in the House of Representatives, the Speaker shall issue his writ for the election of a new member, or if there is no Speaker, or if he is absent from the Commonwealth, the Governor-General in Council may issue the writ.

34. Until the Parliament otherwise provides, the qualifications of a member of the House of Representatives shall be as follows:—

(i.) He must be of the full age of twenty-one years, and must be an elector entitled to vote at the election of members of the House of Representatives, or a person qualified to become such elector, and must have been for three years at the least a resident within the limits of the Commonwealth as existing at the time when he is chosen:

(ii.) He must be a subject of the Queen, either natural-born or for at least five years naturalised under a law of the United Kingdom, or of a colony which has become or becomes a State, or of the Commonwealth, or of a State.

35. The House of Representatives shall, before proceeding to the despatch of any other business, choose a member to be the Speaker of the House, and as often as the office of Speaker becomes vacant the House shall again choose a member to be the Speaker.

The Speaker shall cease to hold his office if he ceases to be a member. He may be removed from office by a vote of the House, or he may resign his office or his seat by writing addressed to the Governor-General.

36. Before or during any absence of the Speaker, the House of Representatives may choose a member to perform his duties in his absence.

37. A member may by writing addressed to the Speaker, or to the Governor-General if there is no Speaker or if the Speaker is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

38. The place of a member shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the House, fails to attend the House.

39. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the members of the House of Representatives shall be necessary to constitute a meeting of the House for the exercise of its powers.

40. Questions arising in the House of Representatives shall be determined by a majority of votes other than that of the Speaker. The Speaker shall not vote unless the numbers are equal, and then he shall have a casting vote.

#### PART IV.—BOTH HOUSES OF THE PARLIAMENT.

41. No adult person who has or acquires a right to vote at elections for the more numerous House of the Parliament of a State shall, while the right continues, be

1. The franchise qualification was determined by the Commonwealth Franchise Act 1902.



prevented by any law of the Commonwealth from voting at elections for either House of the Parliament of the Commonwealth.

42. Every senator and every member of the House of Representatives shall before taking his seat make and subscribe before the Governor-General, or some person authorised by him, an oath or affirmation of allegiance in the form set forth in the schedule to this Constitution.

43. A member of either House of the Parliament shall be incapable of being chosen or of sitting as a member of the other House.

44. Any person who—

- (i.) Is under any acknowledgment of allegiance, obedience, or adherence to a foreign power, or is a subject or a citizen or entitled to the rights or privileges of a subject or a citizen of a foreign power: or
- (ii.) Is attainted of treason, or has been convicted and is under sentence, or subject to be sentenced, for any offence punishable under the law of the Commonwealth or of the State by imprisonment for one year or longer: or
- (iii.) Is an undischarged bankrupt or insolvent: or
- (iv.) Holds any office of profit under the Crown, or any pension payable during the pleasure of the Crown out of any of the revenues of the Commonwealth: or
- (v.) Has any direct or indirect pecuniary interest in any agreement with the Public Service of the Commonwealth otherwise than as a member and in common with the other members of an incorporated company consisting of more than twenty-five persons:

shall be incapable of being chosen or of sitting as a senator or a member of the House of Representatives.

But sub-section iv. does not apply to the office of any of the Queen's Ministers of State for the Commonwealth, or of any of the Queen's Ministers for a State, or to the receipt of pay, half-pay, or a pension by any person as an officer or member of the Queen's navy or army, or to the receipt of pay as an officer or member of the naval or military forces of the Commonwealth by any person whose services are not wholly employed by the Commonwealth.

45. If a senator or member of the House of Representatives—

- (i.) Becomes subject to any of the disabilities mentioned in the last preceding section: or
- (ii.) Takes the benefit, whether by assignment, composition, or otherwise, of any law relating to bankrupt or insolvent debtors: or
- (iii.) Directly or indirectly takes or agrees to take any fee or honorarium for services rendered to the Commonwealth, or for services rendered in the Parliament to any person or State:

his place shall thereupon become vacant.

46. Until the Parliament otherwise provides, any person declared by this Constitution to be incapable of sitting as a senator or as a member of the House of Representatives shall, for every day on which he so sits, be liable to pay the sum of one hundred pounds to any person who sues for it in any court of competent jurisdiction.

47. Until the Parliament otherwise provides, any question respecting the qualification of a senator or of a member of the House of Representatives, or respecting a vacancy in either House of the Parliament, and any question of a disputed election to either House, shall be determined by the House in which the question arises.

48. Until the Parliament otherwise provides, each senator and each member of the House of Representatives shall receive an allowance of four hundred pounds a year to be reckoned from the day on which he takes his seat.<sup>1</sup>

49. The powers, privileges, and immunities of the Senate and of the House of Representatives, and of the members and the committees of each House, shall be such as are declared by the Parliament, and until declared shall be those of the Commons House

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1. By the Parliamentary Allowances Act 1907, assented to on the 23th August, the amount of the allowance was increased to £600 a year.

of Parliament of the United Kingdom, and of its members and committees, at the establishment of the Commonwealth.

50. Each House of the Parliament may make rules and orders with respect to—

- (i.) The mode in which its powers, privileges, and immunities may be exercised and upheld ;
- (ii.) The order and conduct of its business and proceedings either separately or jointly with the other House.

#### PART V.—POWERS OF THE PARLIAMENT.<sup>1</sup>

51. The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to—

- (i.) Trade and commerce with other countries, and among the States :<sup>1</sup>
- (ii.) Taxation ; but so as not to discriminate between States or parts of States :
- (iii.) Bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth :
- (iv.) Borrowing money on the public credit of the Commonwealth :
- (v.) Postal, telegraphic, telephonic, and other like services :
- (vi.) The naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth :
- (vii.) Lighthouses, lightships, beacons and buoys :
- (viii.) Astronomical and meteorological observations :
- (ix.) Quarantine :
- (x.) Fisheries in Australian waters beyond territorial limits :
- (xi.) Census and statistics :
- (xii.) Currency, coinage, and legal tender :
- (xiii.) Banking, other than State banking ; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money :
- (xiv.) Insurance, other than State insurance ; also State insurance extending beyond the limits of the State concerned :
- (xv.) Weights and measures :
- (xvi.) Bills of exchange and promissory notes :

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1. Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (A) The Constitution Alteration (Legislative Powers) 1910, and (B) the Constitution Alteration (Monopolies) 1910.

(A) *Constitution Alteration (Legislative Powers) 1910.* The object of this proposed law was to extend the powers of the Commonwealth Government (under section 51 of the Constitution) in four directions, viz.—(a) Trade and Commerce, (b) Corporations, (c) Industrial matters, and (d) Trusts and monopolies.

(a) *Trade and Commerce.* In Section 51, para. (i.) of the Constitution it was proposed to omit the words "with other countries, and among the States," so as to give the Commonwealth Parliament power to legislate with respect to trade and commerce, without limitation.

(b) *Corporations.* It was proposed to omit the words (para. xx.) "Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth," and to insert in lieu thereof the words—"Corporations including (a) the creation, dissolution, regulation, and control of corporations ; (b) corporations formed under the law of a State (except any corporation formed solely for religious, charitable, scientific or artistic purposes, and not for the acquisition of gain by the corporation or its members), including their dissolution, regulation, and control ; and (c) foreign corporations, including their regulation and control."

(c) *Industrial Matters.* In para. xxxv. it was proposed to omit the words "Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State," and to insert in lieu thereof the words "Labour and employment, including (a) the wages and conditions of labour and employment in any trade, industry, or calling ; and (b) the prevention and settlement of industrial disputes, including disputes in relation to employment on or about railways, the property of any State."

(d) *Trusts and Monopolies.* It was proposed to amend Section 51 of the Constitution by adding at the end thereof the following paragraph:—" (xi.) Combinations and monopolies in relation to the production, manufacture, or supply of goods or services."

(B) *Constitution Alteration (Monopolies) 1910.* The object of this proposed law was to alter the Constitution by inserting, after Section 51 thereof, the following section:—" 51A. When each House of Parliament, in the same session, has by resolution declared that the industry or business of producing, manufacturing, or supplying goods, or of supplying any specified services, is the subject of any monopoly, the Parliament shall have power to make laws for carrying on that industry or business by or under the control of the Commonwealth, and acquiring for that purpose on just terms any property used in connection with the industry or business."

Neither of the proposed laws was approved by the people.

- (xvii.) Bankruptcy and insolvency :
- (xviii.) Copyrights, patents of inventions and designs, and trade marks :
- (xix.) Naturalisation and aliens :
- (xx.) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth :<sup>1</sup>
- (xxi.) Marriage :
- (xxii.) Divorce and matrimonial causes ; and in relation thereto, parental rights, and the custody and guardianship of infants :
- (xxiii.) Invalid and old-age pensions :
- (xxiv.) The service and execution throughout the Commonwealth of the civil and criminal process and the judgments of the Courts of the States :
- (xxv.) The recognition throughout the Commonwealth of the laws, the public Acts and records, and the judicial proceedings of the States :
- (xxvi.) The people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws :
- (xxvii.) Immigration and emigration :
- (xxviii.) The influx of criminals :
- (xxix.) External affairs :
- (xxx.) The relations of the Commonwealth with the islands of the Pacific :
- (xxxi.) The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws :
- (xxxii.) The control of railways with respect to transport for the naval and military purposes of the Commonwealth :
- (xxxiii.) The acquisition, with the consent of a State, of any railways of the State on terms arranged between the Commonwealth and the State :
- (xxxiv.) Railway construction and extension in any State with the consent of that State :
- (xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State :<sup>1</sup>
- (xxxvi.) Matters in respect of which this Constitution makes provision until the Parliament otherwise provides :
- (xxxvii.) Matters referred to the Parliament of the Commonwealth by the Parliament or Parliaments of any State or States, but so that the law shall extend only to States by whose Parliaments the matter is referred, or which afterwards adopt the law :
- (xxxviii.) The exercise within the Commonwealth, at the request or with the concurrence of the Parliaments of all the States directly concerned, of any power which can at the establishment of this Constitution be exercised only by the Parliament of the United Kingdom or by the Federal Council of Australasia :
- (xxxix.) Matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.

52. The Parliament shall, subject to this Constitution, have exclusive power to make laws for the peace, order, and good government of the Commonwealth with respect to—

- (i.) The seat of Government of the Commonwealth, and all places acquired by the Commonwealth for public purposes :
- (ii.) Matters relating to any department of the public service the control of which is by this Constitution transferred to the Executive Government of the Commonwealth :
- (iii.) Other matters declared by this Constitution to be within the exclusive power of the Parliament.

53. Proposed laws appropriating revenue or moneys, or imposing taxation, shall not originate in the Senate. But a proposed law shall not be taken to appropriate revenue

1. See footnote on previous page.

or moneys, or to impose taxation, by reason only of its containing provisions for the imposition or appropriation of fines or other pecuniary penalties, or for the demand or payment or appropriation of fees for licenses, or fees for services under the proposed law.

The Senate may not amend proposed laws imposing taxation, or proposed laws appropriating revenue or moneys for the ordinary annual services of the Government.

The Senate may not amend any proposed law so as to increase any proposed charge or burden on the people.

The Senate may at any stage return to the House of Representatives any proposed law which the Senate may not amend, requesting, by message, the omission or amendment of any items or provisions therein. And the House of Representatives may, if it thinks fit, make any of such omissions or amendments, with or without modifications.

Except as provided in this section, the Senate shall have equal power with the House of Representatives in respect of all proposed laws.

54. The proposed law which appropriates revenue or moneys for the ordinary annual services of the Government shall deal only with such appropriations.

55. Laws imposing taxation shall deal only with the imposition of taxation, and any provision therein dealing with any other matter shall be of no effect.

Laws imposing taxation, except laws imposing duties of customs or of excise, shall deal with one subject of taxation only; but laws imposing duties of customs shall deal with duties of customs only, and laws imposing duties of excise shall deal with duties of excise only.

56. A vote, resolution, or proposed law for the appropriation of revenue or moneys shall not be passed unless the purpose of the appropriation has in the same session been recommended by message of the Governor-General to the House in which the proposal originated.

57. If the House of Representatives passes any proposed law, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if after an interval of three months the House of Representatives, in the same or the next session, again passes the proposed law with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may dissolve the Senate and the House of Representatives simultaneously. But such dissolution shall not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.

If after such dissolution the House of Representatives again passes the proposed law, with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may convene a joint sitting of the members of the Senate and of the House of Representatives.

The members present at the joint sitting may deliberate and shall vote together upon the proposed law as last proposed by the House of Representatives, and upon amendments, if any, which have been made therein by one House and not agreed to by the other, and any such amendments which are affirmed by an absolute majority of the total number of the members of the Senate and House of Representatives shall be taken to have been carried, and if the proposed law, with the amendments, if any, so carried is affirmed by an absolute majority of the total number of members of the Senate and House of Representatives, it shall be taken to have been duly passed by both Houses of the Parliament, and shall be presented to the Governor-General for the Queen's assent.

58. When a proposed law passed by both Houses of the Parliament is presented to the Governor-General for the Queen's assent, he shall declare, according to his discretion, but subject to this Constitution, that he assents in the Queen's name, or that he withholds assent, or that he reserves the law for the Queen's pleasure.

The Governor-General may return to the House in which it originated any proposed law so presented to him, and may transmit therewith any amendments which he may recommend, and the Houses may deal with the recommendation.

59. The Queen may disallow any law within one year from the Governor-General's assent, and such disallowance on being made known by the Governor-General by speech or message to each of the Houses of the Parliament, or by Proclamation, shall annul the law from the day when the disallowance is so made known.

60. A proposed law reserved for the Queen's pleasure shall not have any force unless and until within two years from the day on which it was presented to the Governor-General for the Queen's assent the Governor-General makes known, by speech or message to each of the Houses of Parliament, or by Proclamation, that it has received the Queen's assent.

## CHAPTER II.—THE EXECUTIVE GOVERNMENT.

61. The executive power of the Commonwealth is vested in the Queen and is exercisable by the Governor-General as the Queen's representative, and extends to the execution and maintenance of this Constitution, and of the laws of the Commonwealth.

62. There shall be a Federal Executive Council to advise the Governor-General in the government of the Commonwealth, and the members of the Council shall be chosen and summoned by the Governor-General and sworn as Executive Councillors, and shall hold office during his pleasure.

63. The provisions of this Constitution referring to the Governor-General in Council shall be construed as referring to the Governor-General acting with the advice of the Federal Executive Council.

64. The Governor-General may appoint officers to administer such departments of State of the Commonwealth as the Governor-General in Council may establish.

Such officers shall hold office during the pleasure of the Governor-General. They shall be members of the Federal Executive Council, and shall be the Queen's Ministers of State for the Commonwealth.

After the first general election no Minister of State shall hold office for a longer period than three months unless he is or becomes a senator or a member of the House of Representatives.

65. Until the Parliament otherwise provides, the Ministers of State shall not exceed seven in number, and shall hold such offices as the Parliament prescribes, or, in the absence of provision, as the Governor-General directs.

66. There shall be payable to the Queen, out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of the Ministers of State, an annual sum which, until the Parliament otherwise provides, shall not exceed twelve thousand pounds a year.

67. Until the Parliament otherwise provides, the appointment and removal of all other officers of the Executive Government of the Commonwealth shall be vested in the Governor-General in Council, unless the appointment is delegated by the Governor-General in Council or by a law of the Commonwealth to some other authority.

68. The command in chief of the naval and military forces of the Commonwealth is vested in the Governor-General as the Queen's representative.

69. On a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments of the public service in each State shall become transferred to the Commonwealth :—<sup>1</sup>

Posts, telegraphs, and telephones :	Lighthouses, lightships, beacons, and buoys :
Naval and military defence :	Quarantine.

But the departments of customs and of excise in each State shall become transferred to the Commonwealth on its establishment.

70. In respect of matters which, under this Constitution, pass to the Executive Government of the Commonwealth, all powers and functions which at the establishment of the Commonwealth are vested in the Governor of a Colony, or in the Governor of a

1. As to departments and dates of transfer, see Section XIX.—COMMONWEALTH FINANCE, § 1 hereinafter.

Colony with the advice of his Executive Council, or in any authority of a Colony, shall vest in the Governor-General, or in the Governor-General in Council, or in the authority exercising similar powers under the Commonwealth, as the case requires.

### CHAPTER III.—THE JUDICATURE.

71. The judicial power of the Commonwealth shall be vested in a Federal Supreme Court, to be called the High Court of Australia, and in such other federal courts as the Parliament creates, and in such other courts as it invests with federal jurisdiction. The High Court shall consist of a Chief Justice, and ~~so~~ many other Justices, not less than two, as the Parliament prescribes.

72. The Justices of the High Court and of the other courts created by the Parliament—

- (i.) Shall be appointed by the Governor-General in Council :
- (ii.) Shall not be removed except by the Governor-General in Council, on an address from both Houses of the Parliament in the same session, praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii.) Shall receive such remuneration as the Parliament may fix ; but the remuneration shall not be diminished during their continuance in office.

73. The High Court shall have jurisdiction, with such exceptions and subject to such regulations as the Parliament prescribes, to hear and determine appeals from all judgments, decrees, orders, and sentences—

- (i.) Of any Justice or Justices exercising the original jurisdiction of the High Court :
  - (ii.) Of any other federal court, or court exercising federal jurisdiction ; or of the Supreme Court of any State, or of any other court of any State from which at the establishment of the Commonwealth an appeal lies to the Queen in Council :
  - (iii.) Of the Inter-State Commission, but as to questions of law only :
- and the judgment of the High Court in all such cases shall be final and conclusive.

But no exception or regulation prescribed by the Parliament shall prevent the High Court from hearing and determining any appeal from the Supreme Court of a State in any matter in which at the establishment of the Commonwealth an appeal lies from such Supreme Court to the Queen in Council.

Until the Parliament otherwise provides, the conditions of and restrictions on appeals to the Queen in Council from the Supreme Courts of the several States are applicable to appeals from them to the High Court.

74. No appeal shall be permitted to the Queen in Council from a decision of the High Court upon any question, howsoever arising, as to the limits *inter se* of the Constitutional powers of the Commonwealth and those of any State or States, or as to the limits *inter se* of the Constitutional powers of any two or more States, unless the High Court shall certify that the question is one which ought to be determined by Her Majesty in Council.

The High Court may so certify if satisfied that for any special reason the certificate should be granted, and thereupon an appeal shall lie to Her Majesty in Council on the question without further leave.

Except as provided in this section, this Constitution shall not impair any right which the Queen may be pleased to exercise by virtue of Her Royal prerogative to grant special leave of appeal from the High Court to Her Majesty in Council. The Parliament may make laws limiting the matters in which such leave may be asked, but proposed laws containing any such limitation shall be reserved by the Governor-General for Her Majesty's pleasure.

75. In all matters—

- (i.) Arising under any treaty :
- (ii.) Affecting consuls or other representatives of other countries :
- (iii.) In which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party :

(iv.) Between States, or between residents of different States, or between a State and a resident of another State :

(v.) In which a writ of Mandamus or prohibition or an injunction is sought against an officer of the Commonwealth :

the High Court shall have original jurisdiction.

76. The Parliament may make laws conferring original jurisdiction on the High Court in any matter—

(i.) Arising under this Constitution, or involving its interpretation :

(ii.) Arising under any laws made by the Parliament :

(iii.) Of Admiralty and maritime jurisdiction :

(iv.) Relating to the same subject-matter claimed under the laws of different States.

77. With respect to any of the matters mentioned in the last two sections the Parliament may make laws—

(i.) Defining the jurisdiction of any federal court other than the High Court :

(ii.) Defining the extent to which the jurisdiction of any federal court shall be exclusive of that which belongs to or is invested in the courts of the States :

(iii.) Investing any court of a State with federal jurisdiction.

78. The Parliament may make laws conferring rights to proceed against the Commonwealth or a State in respect of matters within the limits of the judicial power.

79. The federal jurisdiction of any court may be exercised by such number of judges as the Parliament prescribes.

80. The trial on indictment of any offence against any law of the Commonwealth shall be by jury, and every such trial shall be held in the State where the offence was committed, and if the offence was not committed within any State the trial shall be held at such place or places as the Parliament prescribes.

#### CHAPTER IV.—FINANCE AND TRADE.

81. All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution.

82. The costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund shall form the first charge thereon ; and the revenue of the Commonwealth shall in the first instance be applied to the payment of the expenditure of the Commonwealth.

83. No money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law.

But until the expiration of one month after the first meeting of the Parliament the Governor-General in Council may draw from the Treasury and expend such moneys as may be necessary for the maintenance of any department transferred to the Commonwealth and for the holding of the first elections for the Parliament.

84. When any department of the public service of a State becomes transferred to the Commonwealth, all officers of the department shall become subject to the control of the Executive Government of the Commonwealth.

Any such officer who is not retained in the service of the Commonwealth shall, unless he is appointed to some other office of equal emolument in the public service of the State, be entitled to receive from the State any pension, gratuity, or other compensation, payable under the law of the State on the abolition of his office.

Any such officer who is retained in the service of the Commonwealth shall preserve all his existing and accruing rights, and shall be entitled to retire from office at the time, and on the pension or retiring allowance, which would be permitted by the law of the State if his service with the Commonwealth were a continuation of his service with the State. Such pension or retiring allowance shall be paid to him by the Commonwealth ;

but the State shall pay to the Commonwealth a part thereof, to be calculated on the proportion which his term of service with the State bears to his whole term of service, and for the purpose of the calculation his salary shall be taken to be that paid to him by the State at the time of transfer.

Any officer who is, at the establishment of the Commonwealth, in the public service of a State, and who is, by consent of the Governor of the State with the advice of the Executive Council thereof, transferred to the public service of the Commonwealth, shall have the same rights as if he had been an officer of a department transferred to the Commonwealth and were retained in the service of the Commonwealth.

85. When any department of the public service of a State is transferred to the Commonwealth—

- (i.) All property of the State of any kind, used exclusively in connexion with the department, shall become vested in the Commonwealth; but, in the case of the departments controlling customs and excise and bounties, for such time only as the Governor-General in Council may declare to be necessary;
- (ii.) The Commonwealth may acquire any property of the State, of any kind used, but not exclusively used in connexion with the department; the value thereof shall, if no agreement can be made, be ascertained in, as nearly as may be, the manner in which the value of land, or of an interest in land, taken by the State for public purposes is ascertained under the law of the State in force at the establishment of the Commonwealth;
- (iii.) The Commonwealth shall compensate the State for the value of any property passing to the Commonwealth under this section: if no agreement can be made as to the mode of compensation, it shall be determined under laws to be made by the Parliament;
- (iv.) The Commonwealth shall, at the date of the transfer, assume the current obligations of the State in respect of the department transferred.

86. On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.

87. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth shall be applied annually by the Commonwealth towards its expenditure.

The balance shall, in accordance with this Constitution, be paid to the several States, or applied to the payment of interest on debts of the several States taken over by the Commonwealth.<sup>1</sup>

88. Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.<sup>2</sup>

89. Until the imposition of uniform duties of customs—

- (i.) The Commonwealth shall credit to each State the revenues collected therein by the Commonwealth.
- (ii.) The Commonwealth shall debit to each State—
  - (a) The expenditure therein of the Commonwealth incurred solely for the maintenance or continuance as at the time of transfer, of any department transferred from the State to the Commonwealth;
  - (b) The proportion of the State, according to the number of its people, in the other expenditure of the Commonwealth.
- (iii.) The Commonwealth shall pay to each State month by month the balance (if any) in favour of the State.

1. This has been known as the Braddon clause. The Surplus Revenue Act 1910 provides for the termination of this clause as from the 31st December, 1910, and for the payment to the States of twenty-five shillings per head of population until the 30th June, 1920, or thereafter, until Parliament otherwise provides, subject to certain adjustments for the year ended 30th June, 1911. For further information see Section XIX. hereinafter.

2. Uniform customs duties were imposed by the Customs Tariff 1902, Section 5 of which, together with the schedule, and the whole of the Customs Tariff 1906 were repealed by the Customs Tariff 1908 (see Section XV., COMMERCE, § 2, hereinafter).



90. On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.

91. Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.

92. On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.

But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any Colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation.

93. During the first five years after the imposition of uniform duties of customs and thereafter until the Parliament otherwise provides—

- (i.) The duties of customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State :
- (ii.) Subject to the last sub-section, the Commonwealth shall credit revenue, debit expenditure, and pay balances to the several States as prescribed for the period preceding the imposition of uniform duties of customs.<sup>1</sup>

94. After five years from the imposition of uniform duties of customs, the Parliament may provide, on such basis as it deems fair, for the monthly payment to the several States of all surplus revenue of the Commonwealth.

95. Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth ; and such duties shall be collected by the Commonwealth.

But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth.

<sup>1</sup> The Surplus Revenue Act 1908, which was amended by the Surplus Revenue Act 1910, states that the provisions of Section 93 of the Constitution shall expire on the date of the commencement of the Surplus Revenue Act 1908, that is, on 13th June, 1908, and also makes provisions in lieu of the expired provisions. The Surplus Revenue Act 1910 repeals the greater part of the provisions of the Act of 1908. See foot note to Section 87 of this Act.

96. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit.

97. Until the Parliament otherwise provides, the laws in force in any Colony which has become or becomes a State with respect to the receipt of revenue and the expenditure of money on account of the Government of the Colony, and the review and audit of such receipt and expenditure, shall apply to the receipt of revenue and the expenditure of money on account of the Commonwealth in the State in the same manner as if the Commonwealth, or the Government or an officer of the Commonwealth, were mentioned whenever the Colony, or the Government or an officer of the Colony, is mentioned.

98. The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.

99. The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof.

100. The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.

101. There shall be an Inter-State Commission, with such powers of adjudication and administration as the Parliament deems necessary for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder.

102. The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable, or unjust to any State; due regard being had to the financial responsibilities incurred by any State in connexion with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Inter-State Commission.

103. The members of the Inter-State Commission—

- (i.) Shall be appointed by the Governor-General in Council:
- (ii.) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity:
- (iii.) Shall receive such remuneration as the Parliament may fix; but such remuneration shall not be diminished during their continuance in office.

104. Nothing in this Constitution shall render unlawful any rate for carriage of goods upon a railway, the property of a State, if the rate is deemed by the Inter-State Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States.

105. The Parliament may take over from the States their public debts [as existing at the establishment of the Commonwealth],<sup>1</sup> or a proportion thereof according to the respective numbers of their people as shown by the latest statistics of the Commonwealth, and may convert, renew, or consolidate such debts, or any part thereof; and the States shall indemnify the Commonwealth in respect of the debts taken over, and thereafter the interest payable in respect of the debts shall be deducted and retained from the portions of the surplus revenue of the Commonwealth payable to the several States, or if such surplus is insufficient, or if there is no surplus, then the deficiency or the whole amount shall be paid by the several States.

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1. Under Section 2 of the Constitution Alteration (State Debts) 1909, the words in square brackets are omitted.

CHAPTER V.—THE STATES.

106. The Constitution of each State of the Commonwealth shall, subject to this Constitution, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, until altered in accordance with the Constitution of the State.

107. Every power of the Parliament of a Colony which has become or becomes a State, shall, unless it is by this Constitution exclusively vested in the Parliament of the Commonwealth or withdrawn from the Parliament of the State, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be.

108. Every law in force in a Colony which has become or becomes a State, and relating to any matter within the powers of the Parliament of the Commonwealth, shall, subject to this Constitution, continue in force in the State; and, until provision is made in that behalf by the Parliament of the Commonwealth, the Parliament of the State shall have such powers of alteration and of repeal in respect of any such law as the Parliament of the Colony had until the Colony became a State.

109. When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid.

110. The provisions of this Constitution relating to the Governor of a State extend and apply to the Governor for the time being of the State, or other chief executive officer or administrator of the government of the State.

111. The Parliament of a State may surrender any part of the State to the Commonwealth; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State shall become subject to the exclusive jurisdiction of the Commonwealth.

112. After uniform duties of customs have been imposed, a State may levy on imports or exports, or on goods passing into or out of the State, such charges as may be necessary for executing the inspection laws of the State; but the net produce of all charges so levied shall be for the use of the Commonwealth; and any such inspection laws may be annulled by the Parliament of the Commonwealth.

113. All fermented, distilled, or other intoxicating liquids passing into any State or remaining therein for use, consumption, sale, or storage, shall be subject to the laws of the State as if such liquids had been produced in the State.

114. A State shall not, without the consent of the Parliament of the Commonwealth, raise or maintain any naval or military force, or impose any tax on property of any kind belonging to the Commonwealth, nor shall the Commonwealth impose any tax on property of any kind belonging to a State.

115. A State shall not coin money, nor make anything but gold and silver coin a legal tender in payment of debts.

116. The Commonwealth shall not make any law for establishing any religion, or for imposing any religious observance, or for prohibiting the free exercise of any religion, and no religious test shall be required as a qualification for any office or public trust under the Commonwealth.

117. A subject of the Queen, resident in any State, shall not be subject in any other State to any disability or discrimination which would not be equally applicable to him if he were a subject of the Queen resident in such other State.

118. Full faith and credit shall be given, throughout the Commonwealth, to the laws, the public Acts and records, and the judicial proceedings of every State.

119. The Commonwealth shall protect every State against invasion and, on the application of the Executive Government of the State, against domestic violence.

120. Every State shall make provision for the detention in its prisons of persons accused or convicted of offences against the laws of the Commonwealth, and for the punishment of persons convicted of such offences, and the Parliament of the Commonwealth may make laws to give effect to this provision. .

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#### CHAPTER VI.—NEW STATES.

121. The Parliament may admit to the Commonwealth or establish new States, and may upon such admission or establishment make or impose such terms and conditions, including the extent of representation in either House of the Parliament, as it thinks fit.

122. The Parliament may make laws for the government of any territory surrendered by any State to and accepted by the Commonwealth, or of any territory placed by the Queen under the authority of and accepted by the Commonwealth, or otherwise acquired by the Commonwealth, and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.

123. The Parliament of the Commonwealth may, with the consent of the Parliament of a State, and the approval of the majority of the electors of the State voting upon the question, increase, diminish, or otherwise alter the limits of the State, upon such terms and conditions as may be agreed on, and may, with the like consent, make provision respecting the effect and operation of any increase or diminution or alteration of territory in relation to any State affected.

124. A new State may be formed by separation of territory from a State, but only with the consent of the Parliament thereof, and a new State may be formed by the union of two or more States or parts of States, but only with the consent of the Parliaments of the States affected.

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#### CHAPTER VII.—MISCELLANEOUS.

125. The seat of Government of the Commonwealth shall be determined by the Parliament, and shall be within territory which shall have been granted to or acquired by the Commonwealth, and shall be vested in and belong to the Commonwealth, and shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney.

Such territory shall contain an area of not less than one hundred square miles, and such portion thereof as shall consist of Crown lands shall be granted to the Commonwealth without any payment therefor.

The Parliament shall sit at Melbourne until it meet at the seat of Government.

126. The Queen may authorise the Governor-General to appoint any person, or any persons jointly or severally, to be his deputy or deputies within any part of the Commonwealth, and in that capacity to exercise during the pleasure of the Governor-General such powers and functions of the Governor-General as he thinks fit to assign to such deputy or deputies, subject to any limitations expressed or directions given by the Queen; but the appointment of such deputy or deputies shall not affect the exercise by the Governor-General himself of any power or function.

127. In reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted.

CHAPTER VIII.—ALTERATION OF THE CONSTITUTION.<sup>1</sup>

128. This Constitution shall not be altered except in the following manner :—

The proposed law for the alteration thereof must be passed by an absolute majority of each House of the Parliament, and not less than two nor more than six months after its passage through both Houses the proposed law shall be submitted in each State to the electors qualified to vote for the election of members of the House of Representatives.<sup>2</sup>

But if either House passes any such proposed law by an absolute majority, and the other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, and if after an interval of three months the first-mentioned House in the same or the next session again passes the proposed law by an absolute majority with or without any amendment which has been made or agreed to by the other House, and such other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, the Governor-General may submit the proposed law as last proposed by the first-mentioned House, and either with or without any amendments subsequently agreed to by both Houses, to the electors in each State qualified to vote for the election of the House of Representatives.

When a proposed law is submitted to the electors the vote shall be taken in such manner as the Parliament prescribes. But until the qualification of electors of members of the House of Representatives becomes uniform throughout the Commonwealth, only one-half the electors voting for and against the proposed law shall be counted in any State in which adult suffrage prevails.

And if in a majority of the States a majority of the electors voting approve the proposed law, and if a majority of all the electors voting also approve the proposed law, it shall be presented to the Governor-General for the Queen's assent.

No alteration diminishing the proportionate representation of any State in either House of the Parliament; or the minimum number of representatives of a State in the House of Representatives, or increasing, diminishing, or otherwise altering the limits of the State, or in any manner affecting the provisions of the Constitution in relation thereto, shall become law unless the majority of the electors voting in that State approve the proposed law.

## SCHEDULE.

## OATH.

I, A.B., do swear that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law. SO HELP ME GOD!

## AFFIRMATION.

I, A.B., do solemnly and sincerely affirm and declare that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law.

(NOTE.—*The name of the King or Queen of the United Kingdom of Great Britain and Ireland for the time being is to be substituted from time to time.*)

1. The Constitution has been altered by the following Acts:—The Constitution Alteration (Senate Elections) 1906 (No. 1 of 1907); and the Constitution Alteration (State Debts) 1909 (No. 3 of 1910).

2. The Referendum (Constitution Alteration) Act, 1906-1910, provides the necessary machinery for the submission to the electors of any proposed law for the alteration of the Constitution.

2. **The Royal Proclamation.**—The preceding Act received the Royal assent on the 9th July, 1900. This made it lawful (see Sec. 3) to declare that the people of Australia should be united in a Federal Commonwealth. This proclamation, made on the 17th September, 1900, constituted the Commonwealth as from the 1st January, 1901: it reads as follows :—

BY THE QUEEN.

A PROCLAMATION.

(Signed) VICTORIA R.

WHEREAS by an Act of Parliament passed in the Sixty-third and Sixty-fourth Years of Our Reign intituled, "An Act to constitute the Commonwealth of Australia," it is enacted that it shall be lawful for the Queen, with the advice of the Privy Council, to declare by Proclamation, that, on and after a day therein appointed, not being later than One Year after the passing of this Act, the people of *New South Wales, Victoria, South Australia, Queensland, and Tasmania*, and also, if Her Majesty is satisfied that the people of *Western Australia* have agreed thereto, of *Western Australia*, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia.

And whereas We are satisfied that the people of *Western Australia* have agreed thereto accordingly.

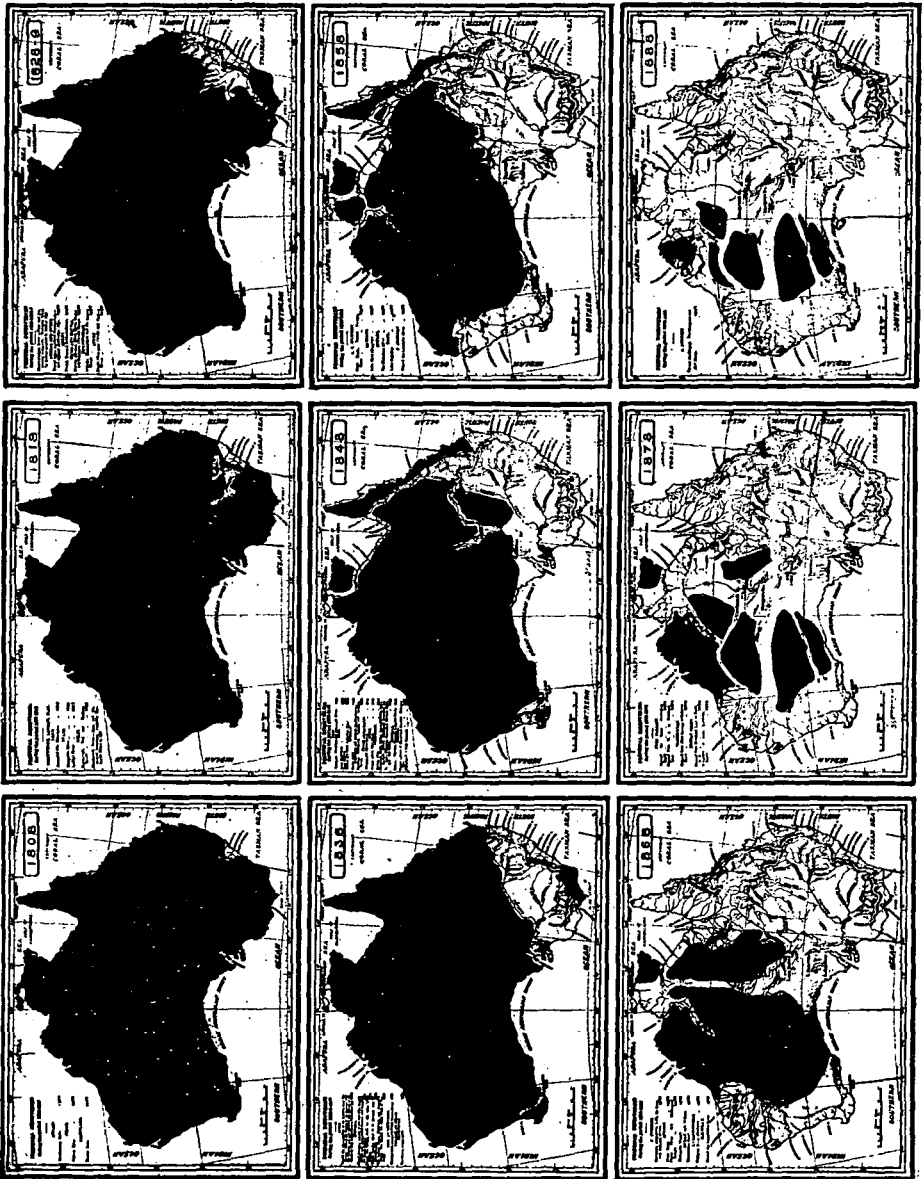
We therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do hereby declare that on and after the First day of *January* One thousand nine hundred and one, the people of *New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia* shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia.

Given at Our Court at *Balmoral* this Seventeenth day of *September*, in the Year of Our Lord One thousand nine hundred, and in the Sixty-fourth Year of Our Reign.

GOD SAVE THE QUEEN.

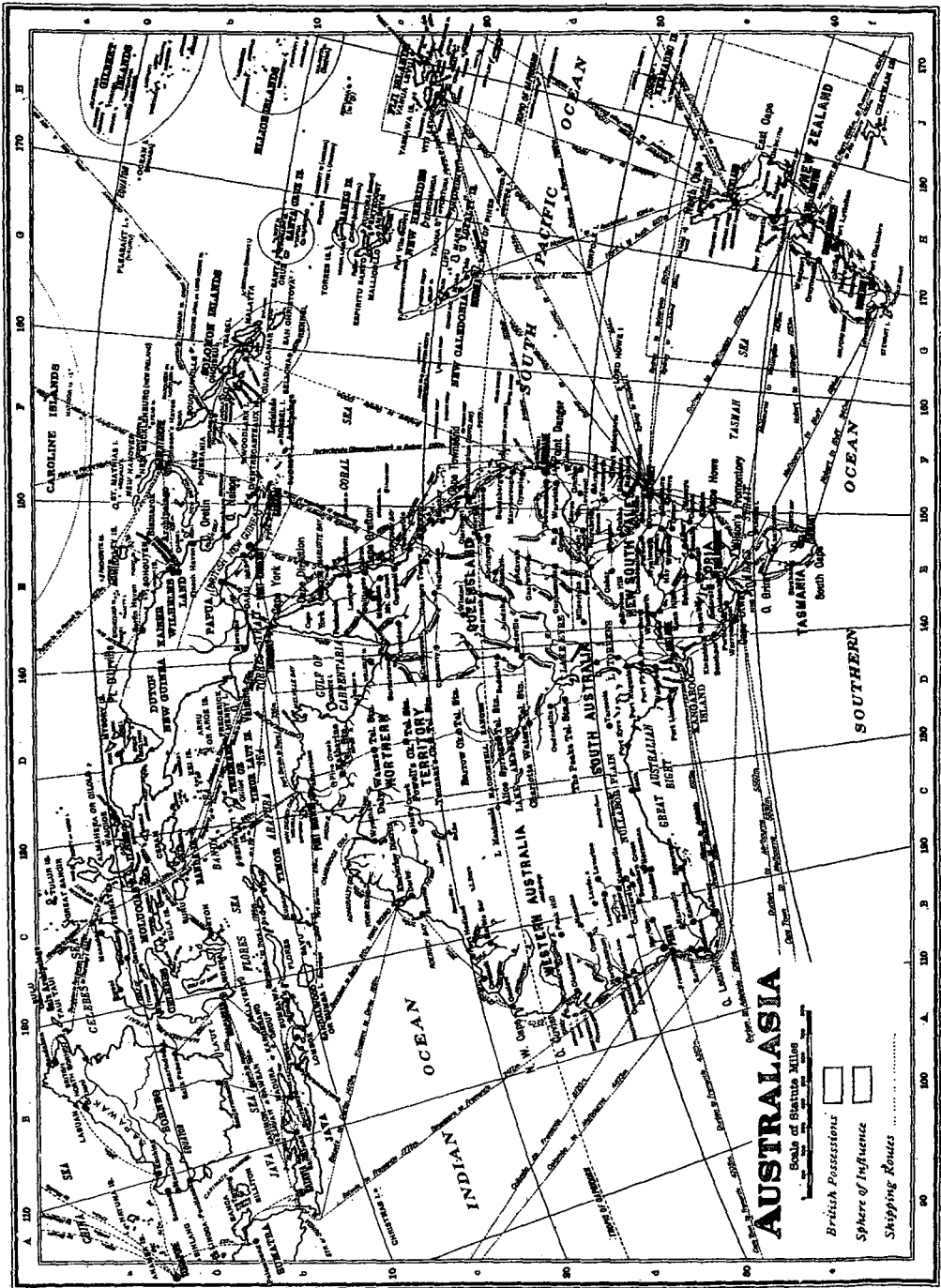
## § 8. Commonwealth Legislation.

1. **The Commonwealth Parliaments.**—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the late Marquis of Linlithgow, then Earl of Hopetoun, Governor-General. It was opened on the 9th May by H.R.H. the Duke of Cornwall and York, who had been sent to Australia for that purpose by His Majesty the King; the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister. It was dissolved on the 23rd November, 1903. The second Parliament was convened on the 2nd March, 1904, by His Excellency the Rt. Hon. Baron Northcote, P.C., G.C.M.G., G.C.I.E., C.B.; the Hon. Alfred Deakin being Prime Minister. The third session closed on the 12th October, 1906, and Parliament was dissolved on the 8th November, 1906. The third Parliament was convened on the 20th February, 1907, and met on that day and the following day only. It was prorogued on the 22nd February, the prorogation eventually extending to the 3rd July, 1907, on which day the second session commenced. The second session was prorogued on the 11th June, 1908, to the 15th July following, and finally to the 16th September, 1908, when it met for the despatch of business; the third session commenced on that



#### PROGRESS OF AUSTRALIAN EXPLORATION.

The above maps compiled by Mr. E. Favenc shew decennially the progress of discovery from 1806 to 1888. The dark shade shews the area of unexplored territory.





day. The third session was prorogued on the 15th December, 1908, the prorogation finally extending to the 26th May, 1909, when the fourth and last session of the third Parliament commenced. This Parliament expired by effluxion of time on 19th February, 1910. The first session of the fourth Parliament was commenced on 1st July, 1910, and was on 29th November of that year prorogued until 7th February, the prorogation finally extending to the 5th September, 1911, when the second session of this Parliament commenced. The Debates of these Parliaments will be found in Volumes I. to LXIII. of the Parliamentary Debates, as follows:—

First Parliament,	1st Session	Vols.	I. to XII., pp. 1 to 16,744
" "	2nd "	"	XIII. " XVII., " 1 " 6,440
Second Parliament,	1st "	"	XVIII. " XXIV., " 1 " 8,618
" "	2nd "	"	XXV. " XXX., " 1 " 7,461
" "	3rd "	"	XXXI. " XXXV., " 1 " 6,491
Third Parliament,	1st "	"	XXXVI. " " 1 " 141
" "	2nd "	"	XXXVI. " XLVI., " 1 " 12,203
" "	3rd "	"	XLVII. " XLVIII., " 1 " 3,180
" "	4th "	"	XLIX. " LIV., " 1 " 7,296
Fourth Parliament,	1st "	"	LV. " LIX., " 1 " 6,893
" "	2nd "	"	LX. " LXIII., " 1 " 4,983

2. **The Several Administrations.**—The following tabular statements shew the names of the several Governors-General, and the constitution of the Ministries which have directed the administration of the affairs of the Commonwealth since its creation:—

(a) GOVERNORS-GENERAL.

- Rt. Hon. EARL OF HOPETOUN (afterwards MARQUIS OF LINLITHGOW), P.C., K.T., G.C.M.G., G.C.V.O. Sworn 1st January, 1901; recalled 9th May, 1902, left Melbourne 2nd July, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Act. Governor-General). Sworn 17th July, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General). Sworn 9th January, 1903; recalled 21st January, 1904.
- Rt. Hon. HENRY STAFFORD BARON NORTHCOTE, P.C., G.C.M.G., G.C.I.E., C.B. Sworn 21st January, 1904; recalled 8th September, 1908.
- Rt. Hon. WILLIAM HUMBLE EARL OF DUDLEY, P.C., G.C.M.G., G.C.V.O., etc. Sworn 9th September, 1908; recalled 31st July, 1911.
- Rt. Hon. THOMAS BARON DENMAN, P.C., G.C.M.G., K.C.V.O. Sworn 31st July, 1911.

(b) BARTON ADMINISTRATION, 1st January, 1901, to 23rd September, 1903.

DEPARTMENTS.	MINISTERS.
External Affairs ... ..	Rt. Hon. SIR EDMUND BARTON, P.C., G.C.M.G., K.C.
Attorney-General ... ..	Hon. ALFRED DEAKIN.
Home Affairs ... ..	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 7/8/03).
Treasury ... ..	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 7/8/03).
Trade and Customs ... ..	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
	Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7/03)
	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (from 7/8/03).
Defence ... ..	The Hon. SIR JAMES ROBERT DICKSON, K.C.M.G. (died 10/1/01).
	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (7/1/01 to 7/8/03).
	Hon. JAMES GEORGE DRAKE (from 7/8/03).
	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 17/1/01).
Postmaster-General ... ..	Hon. JAMES GEORGE DRAKE (5/2/01 to 7/8/03).
	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (from 7/8/03).
Vice-President Executive Council	Hon. RICHARD EDWARD O'CONNOR, K.C.
Without Portfolio ... ..	Hon. N. E. LEWIS (to 23/4/01).
	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (26/4/01 to 7/8/03).

## (c) DEAKIN ADMINISTRATION, 24th September, 1903, to 26th April, 1904.

DEPARTMENTS.	MINISTERS.
External Affairs ... ..	Hon. ALFRED DEAKIN.
Trade and Customs ... ..	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G.
Treasury ... ..	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs ... ..	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Attorney-General ... ..	Hon. JAMES GEORGE DRAKE
Postmaster-General ... ..	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G.
Defence ... ..	Hon. AUSTIN CHAPMAN
Vice-President Executive C'ncl	Hon. THOMAS PLAYFORD.

## (d) WATSON ADMINISTRATION, 27th April to 17th August, 1904.

DEPARTMENTS.	MINISTERS.
Treasurer ... ..	Hon. JOHN CHRISTIAN WATSON.
External Affairs ... ..	Hon. WILLIAM MORRIS HUGHES
Attorney-General ... ..	Hon. HENRY BOURNES HIGGINS, K.C.
Home Affairs ... ..	Hon. EGERTON LEE BATCHELOR.
Trade and Customs ... ..	Hon. ANDREW FISHER.
Defence ... ..	Hon. ANDERSON DAWSON.
Postmaster-General ... ..	Hon. HUGH MAHON.
Vice-President Executive C'ncl	Hon. GREGOR MCGREGOR.

## (e) REID-MCLEAN ADMINISTRATION, 18th August, 1904, to 4th July, 1905.

DEPARTMENTS.	MINISTERS.
External Affairs ... ..	Rt. Hon. GEORGE HOUSTOUN REID, P.C., K.C.
Trade and Customs ... ..	Hon. ALLAN MCLEAN.
Attorney-General ... ..	Hon. SIR JOSIAH HENRY SYMON, K.C.M.G., K.C.
Treasury ... ..	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs ... ..	Hon. DUGALD THOMSON.
Defence ... ..	Hon. JAMES WHITESIDE MCCAY.
Postmaster-General ... ..	Hon. SYDNEY SMITH.
Vice-President Executive C'ncl	Hon. JAMES GEORGE DRAKE.

## (f) SECOND DEAKIN ADMINISTRATION, 5th July, 1905, to 12th November, 1908.

DEPARTMENTS.	MINISTERS.
External Affairs ... ..	Hon. ALFRED DEAKIN.
Attorney-General ... ..	{ Hon. ISAAC ALFRED ISAACS, K.C. (to 11/10/06). Hon. LITTLETON ERNEST GROOM (from 12/10/06).
Trade and Customs ... ..	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 29/7/07). Hon. AUSTIN CHAPMAN (from 30/7/07).
Treasurer ... ..	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 29/7/07). Hon. SIR WILLIAM JOHN LYNE (from 30/7/07).
Postmaster-General ... ..	{ Hon. AUSTIN CHAPMAN (to 29/7/07). Hon. SAMUEL MAUGER (from 30/7/07).
Defence ... ..	{ Hon. THOMAS PLAYFORD (to 23/1/07). Hon. THOMAS THOMSON EWING (from 24/1/07).
Home Affairs ... ..	{ Hon. LITTLETON ERNEST GROOM (to 11/10/06). Hon. THOMAS THOMSON EWING (from 12/10/06 to 23/1/07). Hon. JOHN HENRY KEATING (from 24/1/07).
Vice-President Executive C'ncl	{ Hon. THOMAS THOMSON EWING (to 11/10/06). Hon. JOHN HENRY KEATING (from 12/10/06 to 19/2/07). Hon. ROBERT WALLACE BEST (from 20/2/07).
Honorary Minister... ..	{ Hon. J. H. KEATING (from 5/7/05 to 11/10/06). Hon. S. MAUGER (from 12/10/06 to 29/7/07). Hon. J. HUME COOK (from 28/1/08).

## (g) FISHER ADMINISTRATION, 13th November, 1908, to 2nd June, 1909.

DEPARTMENTS.	MINISTERS.
Treasurer ... ..	HON. ANDREW FISHER.
Attorney-General ... ..	HON. WILLIAM MORRIS HUGHES.
External Affairs ... ..	HON. EGERTON LEE BATCHELOR.
Home Affairs ... ..	HON. HUGH MAHON.
Postmaster-General ... ..	HON. JOSIAH THOMAS.
Defence ... ..	HON. GEORGE FOSTER PEARCE.
Trade and Customs ... ..	HON. FRANK GWYNNE TUDOR.
Vice-President Executive C'ncl	HON. GREGOR MCGREGOR.
Honorary Minister ... ..	HON. JAMES HUTCHINSON.

## (h) THIRD DEAKIN ADMINISTRATION, 2nd June, 1909, to 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister (without P'tfolio)	HON. ALFRED DEAKIN.
Defence... ..	HON. JOSEPH COOK.
Treasurer ... ..	Rt. HON. SIR JOHN FORREST, P.C., G.C.M.G.
Trade and Customs ... ..	HON. SIR ROBERT WALLACE BEST, K.C.M.G.
External Affairs ... ..	HON. LITTLETON ERNEST GROOM.
Attorney-General ... ..	HON. PATRICK McMAHON GLYNN.
Postmaster-General ... ..	HON. SIR JOHN QUICK.
Home Affairs... ..	HON. GEORGE WARBURTON FULLER.
Vice-President Executive C'ncl	HON. EDWARD DAVIS MILLEN.
Honorary Minister ... ..	Colonel The Hon. JUSTIN FOX GREENLAW FOXTON, C.M.G.

## (i) SECOND FISHER ADMINISTRATION, 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister and Treasurer...	Rt. HON. ANDREW FISHER, P.C.
Attorney-General ... ..	HON. WILLIAM MORRIS HUGHES.
External Affairs ... ..	{ HON. EGERTON LEE BATCHELOR (died Oct., 1911). HON. JOSIAH THOMAS (from 14/10/11).
Postmaster-General ... ..	{ HON. CHARLES EDWARD FRAZER (from 14/10/11). HON. JOSIAH THOMAS (to 13/10/11).
Defence ... ..	HON. GEORGE FOSTER PEARCE.
Trade and Customs ... ..	HON. FRANK GWYNNE TUDOR.
Home Affairs ... ..	HON. KING O'MALLEY.
Vice-President Executive C'ncl	HON. GREGOR MCGREGOR.
Honorary Ministers ... ..	{ HON. EDWARD FINDLEY. HON. ERNEST ALFRED ROBERTS (from 23/10/11). HON. CHARLES EDWARD FRAZER (to 13/10/11).

A further list of the Ministers of State for the Commonwealth, arranged according to the respective offices occupied, is given in the section of this book dealing with the subject of *General Government* (see Section XXV.).

3. **The Course of Legislation.**—The actual legislation by the Commonwealth Parliament up to the end of the 1910 session is indicated in alphabetical order in "Vol. 9 of the Acts of the Parliament of the Commonwealth of Australia, passed in the session of 1910, with Tables, Appendices and Indexes." A "Chronological Table of Acts passed from 1901 to 1910, shewing how they are affected by subsequent legislation or lapse of time" is also given, and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished. Reference may be made to these for complete information. The nature of Commonwealth legislation, up to October, 1911, and its relation to the several provisions of the Constitution, are set forth in the following tabular statement:—

**ANALYTIC TABLE OF COMMONWEALTH LEGISLATION,  
FROM 1901 TO DECEMBER, 1911, IN RELATION TO THE SEVERAL PROVISIONS OF  
THE CONSTITUTION.<sup>1</sup>**

Section of Constitution.	Short Title of Commonwealth Act.*
	<b>AMENDMENT OF THE CONSTITUTION.</b>
	Constitution Alteration (Senate Elections) 1906. Constitution Alteration (State Debts) 1909.
	<b>PARLIAMENTARY AND ELECTORAL LAW.</b>
8—30	<b>PARLIAMENTARY FRANCHISE—</b> Commonwealth Franchise Act 1902.
9—34	<b>ELECTIONS—</b> Commonwealth Electoral Act 1902-1911. Senate Elections Act 1903.
24	<b>DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES—</b> Representation Act 1905.
47	<b>DISPUTED ELECTIONS AND QUALIFICATIONS—</b> Commonwealth Electoral Act 1902-1911, Part XVI. Disputed Elections and Qualifications Act 1907.
48	<b>ALLOWANCES TO MEMBERS—</b> <i>Parliamentary Allowances Act 1902.*</i> Parliamentary Allowances Act 1907.
49	<b>PRIVILEGES OF PARLIAMENT—</b> Parliamentary Papers Act 1908.
	<b>GENERAL LEGISLATION.</b>
51—(i.)	<b>TRADE AND COMMERCE—EXTERNAL AND INTERSTATE—</b> Sea Carriage of Goods Act 1904 [ <i>Bills of Lading</i> ]. Secret Commissions Act 1905. Commerce (Trade Descriptions) Act 1905 [ <i>Merchandise Marks</i> ]. Australian Industries Preservation Act 1906-1910 [ <i>Trusts and Dumping</i> ]. Spirits Act 1906. <i>Seamen's Compensation Act 1909.</i> Customs (Inter State Accounts) Act 1910. Northern Territory Acceptance Act 1910 (s. 13). Seamen's Compensation Act 1911.
(ii.)	<b>TAXATION—</b> <i>Machinery Acts—</i> Customs Act 1901-1910. Beer Excise Act 1901. Distillation Act 1901. Excise Act 1901. Spirits Act 1906. Excise Procedure Act 1907. Australian Notes Act 1910 (s. 12). Land Tax Assessment Act 1910-1911. <i>Taxing Acts—</i> <i>Customs Tariff 1902.*</i> <i>Customs Tariff 1906 [Agricultural Machinery].*</i> Customs Tariff (South African Preference) 1906; <i>amended by Customs Tariff 1908 (s. 9).</i> Customs Tariff 1908; <i>amended by Customs Tariff Amendment 1908, and Customs Tariff 1910, and Customs Tariff 1911.</i>

1. This Table has been prepared by the Secretary of the Attorney-General's Department Robert Randolph Garran, Esquire, M.A., C.M.G., Barrister-at-Law, etc.

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
	<p><b>TAXATION—Continued.</b>  Excise Tariff 1902; <i>amended by</i> Sugar Rebate Abolition Act 1903,  Excise Tariff 1905, Excise Tariff (Amendment) 1906, Excise  Tariff 1908; and Excise (Sugar) Act 1910.  Excise Tariff 1906 [<i>Agricultural Machinery</i>].  Excise Tariff 1906 [<i>Spirits</i>].  Excise Tariff 1908; <i>amended by</i> Excise Tariff (Starch) 1908.  Bank Notes Tax Act 1910.  Land Tax Act 1910.</p>
51—(iii.)	<p><b>BOUNTIES ON PRODUCTION OR EXPORT—</b>  Sugar Bounty Act 1903.  Sugar Bounty Act 1905.  Bounties Act 1907.  Manufactures Encouragement Act 1908.  Sugar Bounty Act 1910.  Shale Oils Bounties Act 1910.</p>
(iv.)	<p><b>BORROWING MONEY ON THE PUBLIC CREDIT OF THE COMMON- WEALTH—</b>  Commonwealth Inscribed Stock Act 1911.  Loan Act 1911.</p>
(v.)	<p><b>POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES—</b>  Post and Telegraph Act 1901-1910.  Post and Telegraph Rates Act 1902-1911.  Wireless Telegraphy Act 1905.  Tasmanian Cable Rates Act 1906.  Telegraph Act 1909.  Postal Rates Act 1910.  Purchase Telephone Lines Acquisition Act 1911.  Pacific Cable Act 1911.</p>
(vi.)	<p><b>NAVAL AND MILITARY DEFENCE—</b>  Naval Agreement Act 1903.  Defence Act 1903-1911.  Telegraph Act 1909.  Naval Defence Act 1910-1911.</p>
(vii.)	<p><b>LIGHTHOUSES, LIGHTSHIPS, BEACONS AND BUOYS—</b>  Lighthouses Act 1911.</p>
(viii.)	<p><b>ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS—</b>  Meteorology Act 1906.</p>
(ix.)	<p><b>QUARANTINE—</b>  Quarantine Act 1908.</p>
(xi.)	<p><b>CENSUS AND STATISTICS—</b>  Census and Statistics Act 1905.</p>
(xii.)	<p><b>CURRENCY, COINAGE, AND LEGAL TENDER—</b>  Coinage Act 1909.  Australian Notes Act 1910-1911.</p>
(xiii.)	<p><b>BANKING, OTHER THAN STATE BANKING, ETC.—</b>  Commonwealth Bank Act 1911.</p>
(xiv.)	<p><b>INSURANCE—</b>  Life Assurance Companies Act 1905.  Marine Insurance Act 1909.</p>
(xvi.)	<p><b>BILLS OF EXCHANGE AND PROMISSORY NOTES—</b>  Bills of Exchange Act 1909.</p>
(xviii.)	<p><b>COPYRIGHT, PATENTS, DESIGNS, AND TRADE MARKS—</b>  Customs Act 1901-1910 (s. 52 (a), 57).  Patents Act 1903-1909.  Trade Marks Act 1905.  Copyright Act 1905.  Designs Act 1906.  Patents, Trade Marks and Designs Act 1910.</p>

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
(xix.)	NATURALIZATION AND ALIENS— Naturalization Act 1903.
(xxiii.)	INVALID AND OLD-AGE PENSIONS— Invalid and Old-age Pensions Act 1908-1909.
(xxiv.)	SERVICE AND EXECUTION THROUGHOUT COMMONWEALTH OF PROCESS AND JUDGMENTS OF STATE COURTS— Service and Execution of Process Acts 1901-1905.
(xxv.)	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
(xxvi.)	PEOPLE OF ANY RACE, OTHER THAN ABORIGINAL—SPECIAL LAWS— Pacific Island Labourers Act 1901-1906. Commonwealth Franchise Act 1902 (s. 4). Naturalization Act 1903 (s. 5).
(xxvii.)	IMMIGRATION AND EMIGRATION— Immigration Restriction Act 1901-1910. Pacific Island Labourers Act 1901-1906. Contract Immigrants Act 1905. Emigration Act 1910.
(xxix.)	EXTERNAL AFFAIRS— Extradition Act 1903. High Commissioner Act 1909.
51—(xxx.)	RELATIONS WITH PACIFIC ISLANDS— Pacific Island Labourers Act 1901-1906.
(xxxi.)	ACQUISITION OF PROPERTY FOR PUBLIC PURPOSES— <i>Property for Public Purposes Acquisition Act 1901.*</i> <i>Seat of Government Act 1904.*</i> Lands Acquisition Act 1906. Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910 (s. 10). Northern Territory (Administration) Act 1910.
(xxxii.)	CONTROL OF RAILWAYS FOR DEFENCE PURPOSES— Defence Act 1903-1911 (ss. 64-66, 80, 124).
(xxxiv.)	RAILWAY CONSTRUCTION AND EXTENSION IN ANY STATE WITH THE CONSENT OF THAT STATE— Kalgoorlie to Port Augusta Railway Act 1911.
(xxxv.)	CONCILIATION AND ARBITRATION FOR THE PREVENTION AND SETTLEMENT OF INDUSTRIAL DISPUTES EXTENDING BEYOND THE LIMITS OF ANY ONE STATE— Commonwealth Conciliation and Arbitration Act 1904-1911.
(xxxix.)	MATTERS INCIDENTAL TO THE EXECUTION OF POWERS— Acts Interpretation Act 1901. <i>Punishment of Offences Act 1901.*</i> Acts Interpretation Act 1904. Amendments Incorporation Act 1905. Rules Publication Act 1903. Commonwealth Public Service Act 1902-1911. Jury Exemption Act 1905. Royal Commissions Act 1902. Evidence Act 1905. Commonwealth Salaries Act 1907. Excise Procedure Act 1907. Statutory Declarations Act 1911. Arbitration (Public Service) Act 1911. Commonwealth Inscribed Stock Act 1911.

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
	<b>EXECUTIVE GOVERNMENT.</b>
67	<b>APPOINTMENT AND REMOVAL OF OFFICERS—</b> Commonwealth Public Service Act 1902-1911. Papua Act 1905 (s. 19). Defence Act 1909 (s. 13). High Commissioner Act 1909 (ss. 8, 9). Northern Territory Acceptance Act 1910 (ss. 11, 12).
	<b>THE JUDICATURE.</b>
71—80	<b>CONSTITUTION AND PROCEDURE OF THE HIGH COURT—</b> Judiciary Act 1903-1910. High Court Procedure Act 1903, <i>amended by</i> High Court Procedure Amendment Act 1903.
73	<b>APPELLATE JURISDICTION OF THE HIGH COURT—</b> Judiciary Act 1903-1910. Papua Act 1905 (s. 43).
76	<b>ORIGINAL JURISDICTION OF HIGH COURT—</b>
(i.)	(1) <i>In matters arising under the Constitution or involving its interpretation</i> Judiciary Act 1903-1910 (s. 30).
(ii.)	(2) <i>In matters arising under Laws made by the Parliament—</i>
	Customs Act 1901-1910 (ss. 221, 227, 245).
	Excise Act 1901 (ss. 109, 115, 134).
	Post and Telegraph Act 1901-1910 (ss. 29, 43).
	<i>Property for Public Purposes Acquisition Act 1901*</i> (ss. 12-17, 25, 52, 55b, 58).
	Commonwealth Electoral Act 1902-1911 (ss. 193, 206aa).
	Defence Act 1903-1911 (s. 91).
	Patents Act 1903-1909 (ss. 47, 58, 67, 75-77, 84-87a, 111).
	Commonwealth Conciliation and Arbitration Act 1904-1911 (s. 31).
	Trade Marks Act 1905 (ss. 34, 35, 44, 45, 70-72, 95).
	Australian Industries Preservation Act 1906-1910 (ss. 10, 11, 13, 21, 22, 26).
	<b>Original Jurisdiction of High Court (continued)—</b>
	Referendum (Constitution Alteration) Act 1906 (ss. 27, 31).
	Lands Acquisition Act 1906 (ss. 10, 11, 24, 36-39, 45, 46, 50, 54, 56, 59).
	Disputed Elections and Qualifications Act 1907 (ss. 2, 6).
77—(ii.)	<b>EXCLUDING JURISDICTION OF STATE COURTS—</b>
(iii.)	Judiciary Act 1903-1910 (ss. 38, 38A, 39, 57, 59).
	<b>INVESTING STATE COURTS WITH FEDERAL JURISDICTION—</b>
	Customs Act 1901-1910 (ss. 221, 227, 245).
	Excise Act 1901 (ss. 109, 115, 134).
	Post and Telegraph Act 1901-1910 (ss. 29, 43).
	<i>Punishment of Offences Act 1901.*</i>
	Commonwealth Electoral Act 1902-1191 (s. 193).
	<i>Claims against the Commonwealth Act 1902.*</i>
	Defence Act 1903-1910 (s. 91).
	Judiciary Act 1903-1910 (ss. 17, 39, 68).
	Patents Act 1903-1909 (ss. 30, 47, 58, 67, 75-77, 84-87a, 111).
	Trade Marks Act 1905 (ss. 34, 35, 44, 45).
	Copyright Act 1905 (s. 60, 73).
	Designs Act 1906 (s. 25, 39).
78	<b>RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE—</b> Judiciary Act 1903-1910 (ss. 56-67).
	<b>FINANCE.</b>
81	<b>APPROPRIATION OF MONEYS—</b> Appropriation and Supply Acts 1901-1910. Audit Act 1901-1909 (ss. 36-37, 62a).

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
83	PAYMENT OF MONEYS— Audit Act 1901-1909 (ss. 31-37, 62a).
93	CREDITING OF REVENUE AND DEBITING OF EXPENDITURE— Surplus Revenue Act 1908. Surplus Revenue Act 1909.
94	DISTRIBUTION OF SURPLUS REVENUE— Surplus Revenue Act 1908. Surplus Revenue Act 1909. Surplus Revenue Act 1910.
97	AUDIT OF PUBLIC ACCOUNTS— Audit Act 1901-1909.
	THE STATES.
118	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
119	PROTECTION OF STATES FROM INVASION AND VIOLENCE— Defence Act 1903-1911 (s. 51).
	TERRITORIES.
122	GOVERNMENT OF TERRITORIES— Papua Act 1905. Wireless Telegraphy Act 1905. Seat of Government Acceptance Act 1909. Patents Act 1903-1909 (s. 4a). Northern Territory Acceptance Act 1910. Seat of Government (Administration) Act 1910. Northern Territory (Administration) Act 1910.
	MISCELLANEOUS.
125	SEAT OF GOVERNMENT— <i>Seat of Government Act 1904.*</i> Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910.
128	ALTERATION OF CONSTITUTION— Referendum (Constitution Alteration) Act 1906-1910. Constitution Alteration (Senate Elections) Act 1906. Constitution Alteration (State Debts) Act 1909.

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.



## SECTION III.

### PHYSIOGRAPHY.

#### § 1. General Description of Australia.

1. **Geographical Position.**—The Australian Commonwealth, which includes the island continent of Australia proper and the island of Tasmania, is situated in the Southern Hemisphere, and comprises in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9' E. and 153° 39' E., while its northern and southern limits are the parallels of latitude 10° 41' S. and 39° 8' S., or including Tasmania, 43° 39' S. On its north are the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait.<sup>1</sup>

(i.) *Tropical and Temperate Regions.* Of the total area of Australia the lesser portion lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30' S.,<sup>2</sup> the areas within the tropical and temperate zones are approximately as follows:—

**AREAS OF TROPICAL AND TEMPERATE REGIONS**  
OF STATES WITHIN TROPICS.

Areas.	Queensland.	Northern Territory.	Western Australia.	Total
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Within Tropical Zone ...	359,000	426,320	364,000	1,149,320
Within Temperate Zone ...	311,500	97,300	611,920	1,020,720
Ratio of Tropical part to whole State ...	0.535	0.814	0.373	0.530
Ratio of Temperate part to whole State ...	0.465	0.186	0.627	0.470

Thus the tropical part is roughly about one-half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386). See hereafter Meteorology 3.

2. **Area of Australia compared with that of other Countries.**—That the area of Australia is greater than that of the United States of America, that it is four-fifths of that of Canada, that it is more than one-fourth of the area of the whole of the British Empire, that it is nearly three-fourths of the whole area of Europe, that it is more than 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Italy, the Transvaal, and Ecuador, are facts which are not always adequately realised. It is this great size, taken together with the fact of the limited population, that gives to the problems of Australian development their unique character, and its clear comprehension is essential in any attempt to understand those problems.

1. The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2. and, according to Volume XXV. of the "Encyclopædia Britannica," tenth edition, p. 787, are respectively 113° 5' E., 153° 16' E., 10° 39' S., and 39° 11' S., but these figures are obviously defective. A similar inaccuracy appears in the XI. edition of the Encyclopædia.

2. Its correct value for 1912.0 is 23° 27' 2".64, and it decreases about 6".47 per annum.

The relative magnitudes may be appreciated by a reference to the following table, which shews how large Australia is compared with the countries referred to, or *vice versa*. Thus, to take line 1, we see that Europe is about  $1\frac{2}{10}$  times (1.29775) as large as Australia, or that Australia is about three-quarters (more accurately 0.77) of the area of Europe.

#### SIZE OF AUSTRALIA IN COMPARISON WITH THAT OF OTHER COUNTRIES.

Commonwealth of Australia		2,974,581 square miles.	
Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C <sup>w</sup> wealth.
<b>Continents—</b>	Sq. miles.		
Europe ... ..	3,860,272	0.77	1.29775
Asia ... ..	16,972,911	0.18	5.70598
Africa ... ..	11,174,290	0.27	3.75659
North and Central America and West Indies ...	8,539,788	0.35	2.87092
South America ... ..	7,416,871	0.40	2.49342
Australasia and Polynesia ... ..	3,459,618	0.86	1.16306
Total, exclusive of Arctic and Antarctic Conts.	51,423,750	0.06	17.28772
<b>Europe—</b>			
Russia (inclusive of Poland, Ciscaucasia & Finland)	2,122,527	1.40	0.71355
Austria-Hungary (incl. of Bosnia & Herzegovina)	261,035	11.39	0.08776
Germany ... ..	208,780	14.25	0.07011
France ... ..	207,054	14.37	0.06969
Spain ... ..	194,783	15.27	0.06548
Sweden ... ..	172,876	17.21	0.05812
Norway ... ..	124,130	23.96	0.04173
United Kingdom ... ..	121,391	24.50	0.04081
Italy ... ..	110,659	26.88	0.03720
Turkey (inclusive of Crete)	68,715	43.29	0.02310
Denmark (inclusive of Iceland)	55,338	53.73	0.01861
Rumania ... ..	50,720	58.65	0.01705
Bulgaria ... ..	38,080	78.11	0.01280
Portugal ... ..	35,490	83.82	0.01193
Greece ... ..	25,014	118.91	0.00841
Servia ... ..	18,650	159.49	0.00627
Switzerland ... ..	15,976	186.22	0.00537
Netherlands ... ..	12,648	235.29	0.00425
Belgium ... ..	11,373	261.78	0.00382
Montenegro ... ..	3,630	819.67	0.00122
Luxemburg ... ..	998	2941.18	0.00034
Andorra ... ..	175	16997.61	0.00006
Malta ... ..	117	25423.76	0.00004
Liechtenstein ... ..	65	45793.55	0.00002
San Marino ... ..	38	78278.45	0.00001
Monaco ... ..	8	371822.63	...
Gibraltar ... ..	2	1487290.50	...
Total, Europe ... ..	3,860,272	0.77	1.29775
<b>Asia—</b>			
Russia (inclus. of Transcaucasia, Siberia, Steppes, Transcaspia, Turkestan and inland waters)	6,525,130	0.45	2.19364
China and Dependencies...	4,277,170	0.70	1.43791
British India...	1,097,821	2.71	0.36906
Independent Arabia ... ..	966,700	3.08	0.32499
Turkey (including Samos)	693,790	4.29	0.23324
Feudatory Indian States...	675,267	4.41	0.22701
Persia ... ..	628,000	4.74	0.21112

Country.	Area.	Australian Commonwealth in comparison with—	In com- parison with Australian C'wealth.
ASIA (continued)—	Sq. Miles.		
Dutch East Indies ... ..	584,611	5.09	0.19654
Afghanistan ... ..	250,000	11.90	0.08405
Siam ... ..	195,000	15.25	0.06555
Japan (inclusive of Formosa, Pescadores, Kwantung and Southern Sakhalin) ... ..	174,919	17.01	0.05880
Philippine Islands (inclusive of Sulu Archipelago)	127,853	23.27	0.04298
Laos ... ..	98,000	30.35	0.03295
Korea ... ..	86,000	34.59	0.02891
British Borneo and Sarawak ... ..	83,106	35.79	0.02794
Bokhara ... ..	83,000	35.83	0.02790
Omán ... ..	82,000	36.27	0.02757
Nepál ... ..	54,000	55.10	0.01815
Annam ... ..	52,100	57.08	0.01752
Tonking ... ..	46,400	64.10	0.01560
Cambodia ... ..	45,000	66.10	0.01513
Federated Malay States ... ..	28,800	103.28	0.00968
Ceylon ... ..	25,332	117.37	0.00852
Khiva ... ..	24,000	123.94	0.00807
Cochin China ... ..	20,000	148.73	0.00672
Bhutan ... ..	20,000	148.73	0.00672
Aden and Dependencies ... ..	9,005	330.32	0.00303
Timor, etc. (Portuguese Indian Archipelago)	7,330	406.50	0.00246
Cyprus ... ..	3,584	833.33	0.00120
Brunei ... ..	3,000	991.53	0.00101
Goa, Damao, and Diu ... ..	1,638	1818.18	0.00055
Straits Settlements ... ..	1,600	1851.85	0.00054
Sokotra and Kuria Muria Islands ... ..	1,382	2152.22	0.00046
Hong Kong and Dependencies ... ..	390	7692.31	0.00013
Wei-hai-wei ... ..	285	10623.50	0.00009
Bahrein Islands ... ..	250	11898.32	0.00008
Kiauchau ... ..	200	14872.91	0.00007
French India (Pondicherry, etc.) ... ..	196	15176.43	0.00007
Labuan ... ..	30	99152.70	0.00001
Italian Concession, Tientsin ... ..	18	165254.50	0.00001
Macao, etc. ... ..	4	743643.25	...
Total, Asia ... ..	16,972,911	0.18	5.70598
Africa—			
Turkey (inclusive of Egypt and Soudan) ... ..	1,748,900	1.70	0.58796
French Sahara ... ..	1,544,000	1.93	0.51907
Belgian Congo ... ..	909,654	3.27	0.30582
French Congo ... ..	669,000	4.46	0.22491
Angola ... ..	484,800	6.14	0.16298
Rhodesia ... ..	439,575	6.77	0.14778
Abyssinia ... ..	432,432	6.88	0.14538
German East Africa ... ..	384,000	7.74	0.12909
Mauretania ... ..	344,967	8.62	0.11597
Algeria (including Algerian Sahara) ... ..	343,500	8.66	0.11548
German South-west Africa ... ..	322,450	9.23	0.10840
Portuguese East Africa ... ..	293,400	10.14	0.09864
Cape Colony ... ..	276,995	10.74	0.09312
Bechuanaland Protectorate ... ..	275,000	10.82	0.09245
Northern Nigeria Protectorate ... ..	256,400	11.60	0.08620
Madagascar ... ..	228,000	13.05	0.07665
Uganda Protectorate ... ..	223,500	13.31	0.07514
Morocco ... ..	219,000	13.58	0.07362
Kamerun ... ..	191,130	15.56	0.06425
British East Africa Protectorate ... ..	181,600	16.38	0.06105
Italian Somaliland ... ..	139,430	21.34	0.04687
Ivory Coast ... ..	130,000	22.87	0.04370

Country.	Area.	Australian Commonwealth in comparison with—	In com- parison with Australian C'wealth.
AFRICA (continued)—			
	Sq. miles.		
Gold Coast Protectorate (with North Territories)	119,260	24.94	0.04009
Transvaal (with Swaziland) ...	116,962	25.43	0.03932
French Guinea ...	95,000	31.31	0.03194
Southern Nigeria and Protectorate ...	77,260	38.51	0.02597
Senegal ...	74,000	40.20	0.02488
Rio de Oro, etc. ...	73,000	40.75	0.02454
Senegambia and Niger ...	70,000	42.49	0.02353
British Somaliland ...	68,000	43.74	0.02286
Dahomey ...	65,000	45.77	0.02185
Orange River Colony ...	50,392	59.03	0.01694
Tunis ...	50,000	59.49	0.01681
Eritrea ...	45,800	64.95	0.01540
Liberia ...	40,000	74.36	0.01345
Nyasaland Protectorate ...	39,801	74.74	0.01338
Natal ...	35,371	84.10	0.01182
Togoland ...	33,700	88.26	0.01133
Sierra Leone and Protectorate ...	30,000	99.11	0.01009
Portuguese Guinea ...	13,940	213.22	0.00469
Spanish Guinea (Rio Muni, etc.) ...	12,000	247.88	0.00403
Basutoland ...	10,293	289.02	0.00346
French Somali Coast ...	5,790	513.74	0.00194
Gambia and Protectorate ...	4,500	661.02	0.00151
Cape Verde Islands ...	1,480	2000.00	0.00050
Zanzibar ...	1,020	2941.18	0.00034
Réunion ...	965	3082.46	0.00032
Mauritius and Dependencies ...	835	3562.37	0.00028
Fernando Po, etc. ...	814	3654.28	0.00027
Comoro Islands ...	620	4761.91	0.00021
St. Thomas and Prince Islands ...	360	8262.73	0.00012
Seychelles ...	160	19830.54	0.00005
Mayotte, etc. ...	140	21247.01	0.00005
St. Helena ...	47	63288.95	0.00002
Ascension ...	34	87487.65	0.00001
Spanish North and West Africa ...	13	228813.92	...
Total, Africa ...	11,174,290	0.27	3.75660
North and Central America and West Indies—			
Canada ...	3,729,665	0.80	1.25385
United States (exclusive of Alaska, &c.) ...	2,974,159	1.00	0.99985
Mexico ...	767,005	3.88	0.25785
Alaska ...	590,884	5.03	0.19864
Newfoundland and Labrador ...	162,734	18.28	0.05471
Nicaragua ...	49,200	60.46	0.01654
Guatemala ...	48,290	61.61	0.01623
Greenland ...	46,740	63.65	0.01571
Honduras ...	46,250	64.31	0.01555
Cuba ...	44,000	67.61	0.01479
Costa Rica ...	18,400	161.55	0.00619
San Domingo ...	18,045	164.74	0.00607
Haiti ...	10,204	291.55	0.00343
British Honduras ...	8,598	345.96	0.00289
Salvador ...	7,225	411.52	0.00243
Bahamas ...	5,450	545.79	0.00183
Jamaica ...	4,200	708.23	0.00141
Porto Rico ...	3,606	824.90	0.00121
Trinidad and Tobago ...	1,868	1592.39	0.00063
Leeward Islands ...	701	4243.33	0.00024
Guadeloupe and Dependencies ...	688	4323.52	0.00023
Windward Islands ...	672	4426.46	0.00023

Country.	Area.	Australian Commonwealth in comparison with—	In comparison Australian C'wealth.
<b>N. &amp; C. AMERICA &amp; W. INDIES (continued)—</b>	Sq. miles.		
Curacao and Dependencies ...	403	7381.09	0.00014
Martinique ...	381	7807.30	0.00013
Turks and Caicos Islands ...	169	17601.07	0.00006
Danish West Indies ...	138	21554.94	0.00005
St. Pierre and Miquelon ...	93	31984.74	0.00003
Bermudas ...	20	148729.05	0.00001
<b>Total, N. and C. America and W. Indies ...</b>	<b>8,539,788</b>	<b>0.35</b>	<b>2.87093</b>
<b>South America—</b>			
Brazil (inclusive of Acre) ...	3,292,991	0.90	1.10704
Argentine Republic ...	1,135,840	2.62	0.38185
Peru ...	695,733	4.28	0.23389
Bolivia ...	605,400	4.91	0.20352
Colombia ...	435,100	6.84	0.14627
Venezuela ...	393,776	7.55	0.13244
Chile ...	292,580	10.17	0.09836
Paraguay ...	171,204	17.37	0.05755
Ecuador ...	116,000	25.64	0.03900
British Guiana ...	90,277	32.95	0.03035
Uruguay ...	72,210	41.19	0.02428
Dutch Guiana ...	46,060	64.60	0.01548
Panamá ...	31,500	94.43	0.01059
French Guiana ...	30,500	97.56	0.01025
Falkland Islands ...	6,500	456.62	0.00219
South Georgia ...	1,000	2974.58	0.00034
<b>Total, South America ...</b>	<b>7,416,671</b>	<b>0.40</b>	<b>2.49340</b>
<b>Australasia and Polynesia—</b>			
Commonwealth of Australia ...	2,974,581	1.00	1.00000
Dutch New Guinea ...	151,789	19.60	0.05108
New Zealand and Dependencies ...	104,751	28.39	0.03522
Papua ...	90,540	32.85	0.03044
Kaiser Wilhelm Land ...	70,000	42.50	0.02353
Bismarck Archipelago ...	20,000	148.73	0.00672
British Solomon Islands ...	12,000	247.88	0.00403
New Caledonia and Dependencies ...	8,548	347.99	0.00287
Fiji ...	7,435	400.08	0.00250
Hawaii ...	6,449	460.83	0.00217
New Hebrides ...	5,000	594.92	0.00168
German Solomon Islands ...	4,200	709.22	0.00141
French Establishments in Oceania ...	1,520	1960.78	0.00051
German Samoa ...	1,000	2974.58	0.00034
Caroline and Pelew Islands ...	560	5311.75	0.00019
Tonga ...	390	7627.13	0.00013
Marianne Islands ...	250	11898.32	0.00008
Guam ...	200	14872.91	0.00007
Gilbert Islands ...	166	17919.16	0.00006
Marshall Islands ...	150	19830.54	0.00005
Samoa (U.S.A. part) ...	79	37652.92	0.00003
Norfolk Island ...	10	297458.10	...
<b>Total, Australasia and Polynesia ...</b>	<b>3,459,618</b>	<b>0.86</b>	<b>1.16306</b>
<b>British Empire... ...</b>	<b>11,454,862</b>	<b>0.26</b>	<b>3.85092</b>

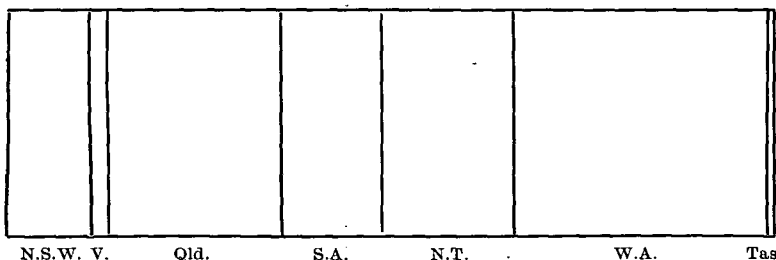
3. **Relative Size of Political Subdivisions.**—As already stated, Australia consists of six States and the Northern Territory. The areas of these, in relation to one another and to the total of Australia, are shewn in the following table :—

**RELATIVE SIZES OF STATES AND COMMONWEALTH.**

State.	Area.	Ratio which the Area of each State and Northern Territory bears to that of other States and Commonwealth.							
		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N. Ter.	C'with.
	Sq. miles.								
New South Wales	310,372	1.000	3.532	0.463	0.817	0.318	11.840	0.593	0.104
Victoria ...	87,884	0.283	1.000	0.131	0.231	0.090	3.352	0.168	0.030
Queensland ...	670,500	2.160	7.629	1.000	1.764	0.687	25.577	1.280	0.225
South Australia	380,070	1.225	4.325	0.567	1.000	0.389	14.498	0.726	0.128
West. Australia	975,920	3.144	11.105	1.455	2.568	1.000	37.228	1.964	0.328
Tasmania ...	26,215	0.085	0.298	0.039	0.069	0.027	1.000	0.050	0.009
North. Territory	523,620	1.687	5.958	0.781	1.378	0.537	19.974	1.000	0.176
Commonwealth	2,974,581	9.584	33.847	4.436	7.827	3.048	113.469	5.681	1.000

Thus, looking at the top line, New South Wales is seen to be over three-and-a-half times as large as Victoria (3.532) and less than one-half the size of Queensland (0.463); or again, looking at the bottom line, the Commonwealth is shewn to be more than nine-and-a-half times as large as New South Wales (9.584), and nearly thirty-four times as large as Victoria (33.847).

These relative magnitudes are shewn in the small diagram below. It may be added that Papua (or British New Guinea), with its area of 90,540 square miles, is 0.030 of the area of the Commonwealth.



4. **Coastal Configuration.**—There are no striking features in the configuration of the coast: the most remarkable indentations are the Gulf of Carpentaria on the north and the Great Australian Bight on the south. The York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1 an enumeration of the features of the coast-line of Australia was given (see pp. 60 to 68).

(i.) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, both of each State and of the whole continent, are shewn in the following table:—

**SQUARE MILES OF TERRITORY PER MILE OF COAST LINE.**  
**STATES AND CONTINENT.**

State.	Coast-line.	Area ÷ Coast-line.	State.	Coast-line.	Area ÷ Coast-line.
	Miles.	Sq. miles.		Miles.	Sq. miles.
New South Wales ...	700	443	South Australia ...	1,540	247
Victoria ...	680	129	Western Australia	4,350	224
Queensland ...	3,000	223	Continent† ...	1,310	261
Northern Territory	1,040	503	Tasmania ...	900	29

1. Area 2,948,366 square miles.

For the entire Commonwealth this gives a coast-line of 12,210 miles, and an average of 244 square miles for one mile of coast line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast-line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(ii.) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyt's Archipelago, in the Northern Territory, and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognised from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. *Geographical Features of Australia.*—As indicated in the preceding issues of this Year Book, it is intended each year to give fairly complete information concerning some special geographical element. Thus No. 1 Year Book, pp. 60-68, contains an enumeration of Coastal features, No. 2, pp. 66-77, deals with Hydrology, No. 3, pp. 59-72, with Orography, and No. 4, pp. 59-82 with the Lakes of Australia. In the present issue the Islands of Australia constitute the special feature treated. An orographical or vertical relief map of Australia will be found on page 81.

## § 2. Islands off the Coast of the Commonwealth.

1. *General.*—The following section contains the latest available information regarding the islands off the coast of each State. Many of these islands are merely barren and precipitous rocks, while others are exceedingly fertile. In some cases, owing to incomplete surveys, the details available are extremely meagre.

2. *New South Wales.*—(i.) *Introductory.* The accompanying information regarding the islands of New South Wales has been compiled from particulars furnished by the Lands Department of that State. The name, position, area, etc., of each island will be found in the appended tabular statement.

(ii.) *Fauna.* (a) *Mammals.* Though some species of rats and bats doubtless occur on the islands off the New South Wales coast, there does not appear to be a record of any having been collected. The islands are too small and barren to support any of the larger Marsupialia. Three species of seals are known from the islands and mainland, and may occur anywhere northwards to Seal Rocks or even farther north. The Leopard Seal (*Ogmorhinus leptonyx*, Blainville) is recorded from Sydney and Newcastle; the Australian Fur-seal (*Arctocephalus forsteri*, Lesson), and the Australian Sea-lion (*Zalophus lobatus*, Gray), both occur on Seal Rocks.

(b) *Aves.* The avi-fauna of the insular areas contiguous to the coast of New South Wales is almost alike from its northern to southern boundaries. Naturally it consists principally, if not entirely, of sea or shore birds, on islands where there is no vegetation. Small islands covered with a dense but stunted vegetation are also tenanted by similar species to those found on the near mainland, chiefly by honey-eaters, thorn-bills or tits, warblers, scrub-wrens, silvereyes, swallows, finches, and flycatchers. Should there also be an expanse of open grass land, the Australian pipit or "ground lark" and possibly quail will be found. Islands of larger size carrying trees of great girth, in parts are also resorted to by shrike-thrushes, cuckoo-shrikes, butcher-birds, thick-heads, robins, pigeons, parakeets, etc.

Of all the sea and shore frequenting species inhabiting the contiguous islands of the coast of New South Wales the white-breasted or red-backed fish eagle (*Haliastur girrenera*, Vieillot), and the white-winged petrel (*Estrelata leucoplera*, Gould) are the only two species that are not found farther south than the Hunter River. On the other hand, the farther north one goes the rarer becomes the hooded dotterel (*Ægialitis cucullatus*, Vieillot), and the little penguin (*Eudyptula minor*, Gould). In the following list those

species only are included that one might reasonably expect to find on the different islands, according to their size and formation, for one would not look for shore-frequenting species on a rock-bound island coast; neither are here recorded those that are driven there by winds and gales from other parts:—White-bellied sea eagle (*Haliastur leucogaster*, Gmelin), white-breasted or red-backed sea eagle (*Haliastur girrenera*, Vieillot), white-headed osprey (*Pandion leucocephalus*, Gould), pelican (*Pelecanus conspicillatus*, Gould), gannet (*Sula serrator*, Banks), black cormorant (*Phalacrocorax carbo*, Linn.), little black and white cormorant (*Phalacrocorax melanoleucus*, Vieillot), little black cormorant (*Phalacrocorax sulcirostris*, Brandt), reef heron (*Demigretta sacra*, Gmelin), black swan (*Chenopsis atrata*, Latham), brown duck (*Anas superciliosa*, Gmelin), black duck (*Biziura lobata*, Spaw.), turnstone (*Arenaria interpres*, Linn.), white-breasted oyster-catcher (*Haematopus longirostris*, Vieillot), sooty oyster-catcher (*Haematopus unicolor*, Wagler), golden plover (*Charadrius fulvus*, Gmelin), double-banded dotterel (*Ochthodromus bicinctus*, Jard and Selby), hooded dotterel (*Egialitis cucullatus*, Vieillot), red-capped dotterel (*Egialitis ruficapilla*, Temm.), curlew (*Numeaius cyanopus*, Vieillot), oriental whimbrel (*Numenius variegatus*, Scopoli), godwit (*Limosa novæ-zealandiæ*, Gray), greenshank (*Totanus glottis*, Temm.), sandpiper (*Totanus brevipes*, Vieillot), knot (*Tringa canutus*, Linn.), marsh tern (*Hydrochelidon hybrida*, Paffas), large-crested tern (*Sterna bergii*, Licht.), white-shafted tern (*Sternula sinensis*, Gmelin), Pacific gull (*Gabianus pacificus*, Latham), silver gull (*Larus novæ-hollandiæ*, Steph.), white-faced storm petrel (*Pelagodroma fregata*, Latham), wedge-tailed petrel (*Puffinus chlororhynchus*, Lesson), short-tailed petrel (*Puffinus tenuirostris*, Temm.), giant petrel (*Ossifraga gigantea*, Gmelin), white-winged petrel (*Diastrelata leucoptera*, Gould), prion (*Prion brevirostris*, Gould), crested grebe (*Podiceps cristatus*, Linn.), little penguin (*Eucyptula minor*, Gould).

(c) *Mollusca*. Most of the islands are too small and barren to afford shelter to an invertebrate fauna, but Cabbage Tree Island, off Port Stephens, is clothed with a luxuriant vegetation, and here have been found the following species of snails:—*Thersites jervensis*, Quoy and Gaimard; *rhytida capillares*, Ferussac; *tornatellina jacksonensis*, Cox, *laoma mortii*, Cox; *endodonta sericatula*, Pfeiffer; *vertigo strangei*, Pfeiffer.

(d) *Insecta*, *Arachnida*, etc. The islands off the coast of New South Wales have never been visited by naturalists interested in entomology, hence little or nothing is known of their insect and arachnid faunæ. There cannot be any doubt, however, that if they were systematically "collected" many species peculiar to the mainland would be discovered, because these little dots of land act as "traps" for insects that are wind-borne. In respect of the coleoptera, certain carabs and scarabs would most certainly occur, as also weevils and leaf-beetles. The butterfly fauna would naturally be very small, because these tiny islands are too bleak and barren to afford them suitable breeding grounds. Nevertheless, some of the hardier forms would certainly occur, such as the "Meadow Brown" (*Junonia villida*) and the "Painted Lady" (*Pryameis kershawi*), as well as a few of the sturdier blues, such as *Polyommatus baticus* (an almost cosmopolitan species) and *Zuzera labradus*, another widely distributed form. Again, some of the wandering whites, of which *Belanois java* is the commonest form, may also be found, because large numbers of them are at times met with by ships passing up and down the coast. The same remarks apply to moths, and to grasshoppers and locusts. Where there are trees, cicadas are almost certain to be found.

No matter how bleak the position may be, if there are any insects at all, spiders are sure to be found, and of these animals the hardier argiopidae are certain to occur, such as *Araneus productus*, *A. heroine*, and *A. brisbana*. These species are common, widely distributed, and, naturally, extremely variable in size and colour. Their snares are large and wheel-like, i.e., orbicular. Where there is scrub, certain crab-spiders (*Thomisidae*) and jumping spiders (*Sallicidae*) are certain to occur. The fact that wingless animals, such as spiders, are so widely distributed is due to their "ballooning" habits. Young spiders when leaving the "nursery" to start life on their own account, void long strands of silk. These latter float in the air and lift the baby spider-aviators, and carry them away. Many are drowned by falling into the sea during these journeys, but others succeed in locating themselves in localities that afford protection and an abundance of food.



(iii.) *Flora*. Comparatively little is known of the flora of the islands off the New South Wales coast. The accompanying details refer to those islands which have been more or less closely examined.

*S. Solitary Island*. For the most part smooth rocks, but in crevices *Monotoca elliptica*, *Eugenie australis*, *Nephelium coriaceum*, *Banksia integrifolia* from 6 inches to 3 to 4 feet. *Themeda forskalli* is the prevailing grass.

*North Coffs or Mutton Bird Island*. Covered with *Themeda forskalli* and dwarf *Myoporum* forming a roof over the numerous crevices wherein the birds build, etc., *Banksia integrifolia* being the principal timber. *Pandanus pedunculata* fairly common near the beach.

*South Coffs Island*. Small rocks with black soil (no water) grassed over with *Themeda forskalli*, *Banksia integrifolia*, small to normal size, *Hoya australis*, *Hibbertia volubilis*, *Senecio australis*, *Crotalaria*, *Ipomœa biloba*, *Westringia rosmariniformis*, *Sophora tomentosa*, *Canavalia obtusifolia*, *Lippia nodosa*, *Spinifex hirsuta*, *Convolvulus erubescens*, *Monotoca elliptica*, *Myoporum acuminatum*, var. *Pandanus pedunculatus*.

*Boondelbah Island*. Contains some rich timbers, affording good shade for picnic and fishing parties from Tea Gardens, Nelson's Bay, etc. The timber is composed of *Eucalyptus microcorys* (tallow-wood), *E. botryoides*, *E. saligna* (blue gum), *E. corymbosa* (bloodwood), *E. paniculata* (grey ironbark), *E. acmenioides* (white mahogany), *E. resinifera* (red mahogany), *Banksia serrata* (honeysuckle), *B. ericifolia*, *B. collina*, *B. robur*, var. *minor*, *B. integrifolia*, *Eugenia australis* (native cherry), *E. Smithii* (lilli-pilli), *Rhodomyrtus psidioides* (native guava), *Phyllanthus ferdinandi*, *Cupania anacardioides*, *Synoum glandulosm*, *Nephelium coriaceum*, *Acacia decurrens*, *A. longifolia*, *A. harpophylla* (?), *A. suaveolens*, and *A. linifolia*, *Melaleuca armillaris*, *Angophora lanceolata*. Near and about the trigonometrical station is a large patch of *Lasiopetalum longistamineum*. The south side of the island immediately facing the entrance to the port is precipitous and covered by a wind-swept, densely foliaged, and almost impenetrable scrub.

## ISLANDS OFF THE COAST OF NEW SOUTH WALES.

Name of Island.	Geographical Position.		Area in acres (approximate).	General Description, etc.
	Lat. S.	Long. E.		
Cook, 31 ch. N.E. of Fingal Point...	28 11	153 36	10	Precipitous sides except the north, 70 ft. high. Columnar basalt.
Juan and Julia, 1½ m. N.N.W. from Cape Byron	28 36	153 39	1½	Bare rocks 30 ft. high. Granite. A red fixed light on Cape Byron lighthouse, is visible only over these islets.
North Solitary, 7½ m. E. of Wooli Wooli River	29 55	153 24	52	140 ft. high. No vegetation of any kind. Granite.
N.W. Solitary, 3½ m. S.E. Redbank River	30 0	153 17	15	30 ft. high. No timber. Granite.
S.W. Solitary, 1½ m. E. Bare Bluff	30 9	153 14	16	Hilly country, no timber or trees, poor grass. Schist.
S. Solitary, 11½ m. N.E. of Coffs Harbour	30 11	153 17	38	Hilly country, no timber or trees, poor grass. Schist. Small wharf for boats to land stores. Revolving white light, 8-min. with flash of 7 secs. visible 20 mls.
Split Solitary, 5½ m. N.N.E. of Coffs Harbour	30 13	153 11	6	Hilly country, no timber or trees, poor grass. Schist.
North Coffs or Mutton Bird, 30 ch. from Coffs Harbour (leased)	30 17	153 10	31	Hilly country, no timber or trees, poor grass. Small wharf. Schist.
South Coffs, close to Coffs Harbour (part leased)	30 18	153 9	31	Hilly country, no timber or trees, poor grass. Schist.
Broughton, 9½ m. N.E. Pt. Stephens	32 37	152 20	1145 60	Rocky, 286 ft. high, covered with low scrub and grass. The southern extremity of larger island at low water is connected to a small islet 100 ft. high named South Rock. Carboniferous sandstone and volcanic rocks. Centre of lobster and other fishing. Good landing in Esmeralda Cove on S.E. and N.E. sides.

## ISLANDS OFF THE COAST OF NEW SOUTH WALES—Continued.

Name of Island.	Geographical Position.		Area in acres (approximate).	General Description, etc.
	Lat. S.	Long. E.		
Cabbage Tree, 1½ m. N.E. Yacaaba Head	32 41	152 15	68	Rocky, 475 ft. high, covered with low scrub and grass with cabbage tree palms in the gullies. Porphyry. Landing can be effected on S.W. of island in smooth weather.
Little, 1½ m. E. of Yacaaba Head...	32 42	152 15	3	Bare rock, 30 ft. high. Porphyry.
Boondelbah, 2½ m. of Port Stephens	32 42	152 15	34	Rocky islet, about 180 ft. high, patches of low scrub exist. Porphyry.
Point Stephens, 1½ m. Pt. Stephens	32 45	152 13	270	Rocky Is., 250 ft. high covered with low scrub and grass, connected with mainland by narrow spit covered at high water. Porphyry. A lighthouse on extreme easterly point shewing revolving white and red light alternately; red and white every min., with 10 secs. eclipse between the colors; white light visible 17 miles, red 12 miles.
Moon, ½ m. E. of Lake Macquarie	33 5	151 41	6	Rocky, 20 ft. high, covered with grass and scrub. Sandstone, permo-carbonif.
Flat, 1 m. S. Catherine Hill Bay ...	33 10	151 39	10	Low flat Island, 15 ft. high
Bird, 3 m. N. of North Head, and ½ m. off shore	33 13	151 37	30	Rocky, 175 ft. high, covered with grass and low scrub, is inaccessible except in smooth westerly weather. Sandstones of Narrabeen series. Triassic.
"Five Islands"— Tom Thumb, No. 1, 2½ m. E. from Tom Thumb Lagoon	34 27	150 57	6a 3r	Bare rock, 15 ft. high. Dolerite.
Tom Thumb, No. 2, 2½ m. E. from Tom Thumb Lagoon	34 28	150 58	6b	Bare rock, 20 ft. high. Dolerite.
Big, off Red Pt. ...	34 29	150 57	45a 3r	Rock and sand, light scrub, 70 ft. high. Dolerite.
Small, W. of Big Is., off Red Pt.	34 29	150 56	1a 1r	Bare rock, 50 ft. high. Dolerite.
Small, E. of Big Is., off Red Pt.	34 29	150 57	5a 3r	Bare rock, 30 ft. high, connected with Big Is. at low water. Dolerite.
Windang, ¼ m. E. Lake Illawarra	34 32	150 54	5	Bare rock and sand, about 20 ft. high. Sandstone permo-carboniferous.
Bowen, S. side of ent. to Jervis Bay	35 7	150 47	132	Rocky, with low scrub, 140 ft. high, well grassed. Sandstone, permo-carboniferous.
Green, ½ m. E. of ent. Cunjurong or Conjola Lake	35 16	150 32	22	Sand overlying rock, scrubby. Sandstone, permo-carboniferous.
Crampton (local name Tobouree), ¼ m. E. of Tobouree Lake	35 26	150 26	10	Rocky, partly grassed, about 150 ft. high, connected with main land very low tides.
Stokes, ¼ m. N.E. Termeil Point	35 27	150 25	6	Bare rock.
Brush, ¼ m. Murramarang Point...	35 32	150 26	184	140 ft. high, good soil, well grassed, honey-suckle timber and scrub. Igneous.
Belowla, ¼ m. N.N.E. O'Hara Head	35 33	150 24	20	Rocky, about 50 ft. high, low scrub and coarse vegetation. Igneous.
O'Hara, 1½ m. S.W. O'Hara Head	35 35	150 23	15	Rocks, 15 ft. high.
Dawson, No. 1, ½ m. S. O'Hara Isd.	35 35	150 22	3	Bare rocks, 10 ft. high.
" No. 2	35 35	150 22	1	" 10 "
Grasshopper, ¾ m. N. Point Upright	35 38	150 21	3	" 40 " patches vegetation.
Wasp, 2 m. from Point Upright ...	35 40	150 20	2	Rough rocks, 40 ft. high, lightly covered with sandy soil; surrounded by submerged reefs.
Flat Rock, 3½ m. N. North Head of Bateman Bay	35 41	150 19	1½	Bare rock always awash at high tide.
Tollgate, No. 1, 2½ m. S. Nth. Head	35 45	150 16	12½	Rough rocks, highest being 150 ft., with light covering of sandy soil, covered with a prickly scrub and marine growth and weeds, but no timber. Basalt.
" No. 2 " "	35 45	150 16	7½	
Broulee, 4 m. N. Moruya River ...	35 51	150 12	85	Rough rocks, covered with soil, trees, grass and scrub; surrounded by reefs.
Montague, 10 m. N.E. of Mount Dromedary	36 15	150 14	285	Split by a deep rocky chasm; the southern half attains an elevation of 250 ft. Long rank grass. The southern part is composed of granite formation and the northern of basaltic. Govt. wharf 20 x 15 ft. Landing is effected direct by boat from ship's side. Lighthouse on summit of island. The light is white, the period of system being 70 secs., composed of fixed 33 secs., eclipse 16 secs., flash 5 secs., eclipse 16 secs., visible for 22 miles.
Bullara or Lennards, 5½ m. E. S.E. Noorooma	37 0	149 57	25	Rock-bound island, 30 ft. high, fair soil, scrub-covered. Devonian sandstone.

3. *Victoria.*—(i.) *Introductory.* The accompanying statement regarding the islands of Victoria has been compiled from information furnished by the Department of Lands and Survey, elaborated somewhat chiefly as regards fauna and flora from notes supplied by Mr. A. H. Mattingley, C.M.Z.S.

(ii.) *Origin.* It appears to be generally agreed that the Australian continent at one time extended some miles lower down than its present southern boundary, and that the islands on the Victorian coast represent the denuded summits of mountain ranges that once traversed the mainland. There is, however, some difference of opinion as regards the direction of these mountain chains. Some geologists affirm that the ranges traversed a land bridge connecting Tasmania with the mainland, while others again maintain that the islands are the peaks of mountain ranges that at one time extended along the coast of Southern Australia as far as the Great Australian Bight.

(iii.) *General Characteristics.* In view of their origin, as referred to above, it is not surprising that many of the Victorian islands are remarkable for their fantastic shape. Several of them are merely tremendous masses of wind-swept rock, devoid of all vegetation, with the exception of a few hardy mosses and lichens. In some cases, it is impossible to effect a landing unless under favourable conditions of wind and tide. Others, again, possess a scanty growth of tough grasses and stunted trees, while, as the list shews, a few are well watered and fertile.

(iv.) *Fauna and Flora.* As the islands are mostly small and isolated, and untenanted by predatory animals such as the dingo or native cat, it is not surprising that they are utilised as breeding grounds by large numbers of sea-birds. For example, it is estimated that between one and two millions of mutton birds regularly nest on Phillip Island, despite the fact that about 600,000 eggs are yearly taken from the island. Fur seals, penguins, and mutton birds are found on Griffiths and Lady Julia Percy Islands, etc. Space will permit of merely a passing reference to the variety of fauna and flora characterising the islands in Port Phillip. As far as possible the information given by Mr. Mattingley has been incorporated in the tabular statement below.

(v.) *The Principal Islands and Groups.* The accompanying information regarding the principal islands or island groups may be read in conjunction with that given in the appended tabular statement.

*Anser Group.* This group consists of three small granite islands about 4 miles to the west of Wilson's Promontory, of which Cleft Island is the most picturesque. The group has been reserved for the purposes of a National Park. Two small islets 40 to 50 feet high lie between Cleft and Middle Island, and a third is situated about 200 yards N.W. of Middle Island. There is a landing place on the northern end of Anser Island.

*French Island.* This island, which is situated in Western Port, is the largest of the Victorian Islands. It is sparsely populated, and generally hilly, with the exception of the low and marshy portion at the north-west corner. Mount Wellington, the highest point, is 314 feet above sea level. The shore line is shallow, the range of tides being from 8 to 12 feet. There are six jetties available to vessels of small tonnage. Along the western arm there is a deep water channel navigable for vessels of any size. There is a fair amount of timber on various parts of the island.

*Gabo Island.* This island is situated about 4 miles S.W. of Cape Howe. The northern end consists of low boulders and is separated from the mainland by a channel which sometimes fills with drifting sand. Inland, near the centre of the island, are a few sandhills whose bare sides face S.E. On the N.W. side there is a small sandy bay with good anchorage for one vessel in all but S.W. gales. The lighthouse at the S.E. extremity was built in 1862, and shews a first order catadioptric fixed white light 179

feet above sea level, and visible for 20 miles. A life-saving rocket apparatus is maintained, and the lighthouse which is also a signal station is connected by telephone with Green Cape and thence with Sydney.

*Phillip Island.* The southern coast line of Phillip Island, which is situated at the entrance to Western Port, consists of rugged cliffs and headlands rising in some instances to 150 feet above sea level. The Nobbys and Cape Woolamai are well-known points. Close to the former are the Seal Rocks, while the latter, which rises to a height of 340 feet, is noted as a mutton-bird rookery. The island is undulating and the soil is well adapted for agriculture and grazing. On the north side is the township of Cowes, a well-known holiday resort. There are also settlements at Rhyll, four miles east of Cowes, and at Newhaven opposite San Remo.

*Raymond Island.* In the Gippsland Lakes, this island separates the division known as Lake King from that known as Lake Victoria. The surface of the island consists of low sandy ridges with marshy flats in places. It is used as a village settlement, the soil being well adapted for fruit-growing and for root crops. The native vegetation consists of stunted gum, ti-tree, bracken, and heath. McMillan Strait on the west side of the island is navigable for vessels drawing up to nine feet, and is the approach to Paynesville, a fishing village on the mainland.

*Seal or Direction Group.* This group consists of several small rugged islets almost devoid of vegetation with the exception of a little coarse grass. Seal Island is the northernmost and largest. Close to this island is the White Rock, 33 feet high, and two smaller rocky islets. *Notch Island* is the second largest of the group. The notch is due to the two hills on the island. *Cliffy Island.* On this island a lighthouse was erected in 1884. The light, which is 180 feet above sea level, is a third order dioptric flashing white light giving five flashes and eclipses alternately in every minute, and is visible for 15 miles. A rocket life-saving apparatus is also kept here.

*Snake Island* lies between Corner Inlet and Port Albert. The island, which is reserved as a site for a public park, consists of high sand hills with intervening flats of sandy loam, and is gradually crumbling away into the sea. The narrower portion at the east end is over  $1\frac{1}{4}$  miles in length, and is separated at high water from the main island. The vegetation comprises stunted gum, honeysuckle, ti-tree, bracken, heath, and tussocky grass. Most of the land birds from the adjacent mainland are found on the island. Wallabies, kangaroo, red deer, wild pigs, opossums, and native bears are also met with. Permanent water is available.

*Sunday Island* is situated two miles S.W. of Port Albert, and is composed of sand hills with intervening flats of sandy loam. Like the preceding island, Sunday Island is also gradually crumbling into the sea. At the eastern end there is a pilot station with fixed white light 32 feet above sea level. The vegetation is similar to that on Snake Island.

*Swan Island* lies in Port Phillip Bay, near Queenscliff. It is low and marshy with a ridge of sand hills along the western shore, and is connected with Queenscliff by a tramway across the shallow opening forming the south entrance to Swan Bay. The island is used almost entirely for military purposes.

*Tortoise Island* is in Western Port and close to French Island. It is flat-topped with a conspicuous headland on the southern portion known as Tortoise Head. Twenty acres of the island have been reserved for defence purposes. About 80 acres consist of highlands of rich volcanic soil, the remainder being flat salt marsh.

## ISLANDS OFF THE COAST OF VICTORIA.

Name of Island and Geographical Position.	Highest point above Sea Level. Feet.	Nearest distance to Mainland. Miles.	Greatest Length. Miles.	Greatest Breadth. Miles.	Area. Acres.	Geological Characteristics, Fauna, Flora, etc.
Anser Group—						
Anser, 4½ m. W. of Wilson's Promontory	498	1½	1	¾	190	Granite. Flora and Fauna identical with that of the Glennie Group (see below)
Unnamed, ½ m. S.W. Anser	312	2½	¾	¾	80	Granite
Cleft, ¾ m. W. Middle Island	371	2½	¾	¾	15	
Barton (1) in Lake Victoria	—	—	—	—	88	Tertiary, sand, and mud
Baxter (1) or Pelican, in L. King	—	—	—	—	22	
Benison, in Corner Inlet	—	1½	—	—	—	Granite. Reserved for National Park and set apart for the preservation of native game
Bird Rocks, S. of Waratah Bay	60	—	—	—	—	3 in number. Fauna—Sooty oyster catchers ( <i>haematopus unicolor</i> ), terns. Flora— <i>Mesembrianthemum</i> , moss.
Breakwater, nr. Warrnambool 200 yds. E. of Middle Island	18	¾	—	—	—	Tertiary, calcareous and sandy beds. The Breakwater pier, connected by rail with the Town of Warrnambool, extends from this rock about 1000 ft. in a N.E. direction, and is connected with the shore at the East of Merri Creek entrance by a timber viaduct
Bullock, near Welshpool, ½ m. E. of Little Dog Island	—	¾	1½	¾	170	Tertiary, sand and mud. See the remarks against Dog Island. 118 acres alienated
Bullock (1) in Lake King, at entrance to Cunningham Arm	—	¾	¾	¾	12	Tertiary, sand, and mud. A white light, visible 3 miles in clear weather, is shewn from the outer end of the rocky wall extending S.E. from Bullock Island, and marks the North side of the entrance to Cunningham Arm
Churchill, in Western Port, 1 mile N.W. of Newhaven	—	1½	1½	¾	140	Tertiary, older. Separated from Phillip Id. by a narrow passage. 140 acres alienated
Citadel	—	—	—	—	—	See Glennie Group
Cleft	—	—	—	—	—	See Anser Group
Cliffy	—	—	—	—	—	See Seal or Direction Group
Clonmel, 1 m. S.E. Sunday Id.	—	—	—	—	—	This Island has recently disappeared, the sea waters now breaking over it
Crescent (1) in Lake Victoria	—	¾	¾	¾	24	Tertiary, sand, and mud
Direction Group, nr. Wilson's Promontory	—	—	—	—	—	See Seal or Direction Group
Do-Boy, in Corner Inlet, 2 m. from W. Shore	—	2½	—	—	—	Granite. Reserved for National Park and the preservation of native game. Fauna—Mutton birds. Flora— <i>Mesembrianthemum</i> and coarse grasses
Dog, near Corner Inlet	—	¾	1½	¾	460	Tertiary, sand, and mud. Connected with mainland at low water. Flat, sandy loam. Vegetation—Ti-tree, bracken, and coarse tussocky grass. 415 acres alienated
Eagle's Nest Rock, 3 m. E. of Cape Patterson	59	¾	—	—	—	Mesozoic, sandstone shales and mudstones. A conspicuous rock. Ospreys ( <i>pandion leucocephalus</i> ) use it as a breeding ground
Elizabeth, in Western Port, ½ m. S. of French Island	60	2½	¾	¾	64	Tertiary, older basalt. Grass covered, no timber. 64 acres alienated
Flannagan's (1) in Lake King	—	¾	2	¾	250	Tertiary, sand, and mud. Separated from mainland by Reeves Channel. 193 a. alien.
Fraser (1) in Lake King	—	¾	¾	¾	96	Tertiary, sand, and mud. Separated from the islands on either side by a narrow channel. 70 acres alienated
French, in Western Port	314	1½	11	7½	41300	Tertiary, older basalt; Mesozoic, sandstone shales, and mudstones. 18,200 a. alienated
Gabo, 4 m. S.W. of Cape Howe	171	¾	1½	¾	372	Syenite
Glennie Group—						
Great Glennie, 4 m. W. from Oberon Point, Wilson's Promontory	455	4½	1½	¾	340	Saddle-shaped, and strewn over with blocks of granite which give it a castellated appearance. This group has been set apart as a sanctuary for game. Flora— <i>Mesembrianthemum</i> , coarse grasses, and some unnamed shrubs. Fauna—Cape Barren geese, mutton birds, penguins, lizards
Unnamed, S. Great Glennie	251	4½	¾	¾	65	Granite
Citadel, S. Unnamed Island	367	4½	¾	¾	40	Granite. Is circular in shape and so named owing to resemblance of ancient fortress
Unnamed, E. Citadel Island	215	4½	¾	¾	25	Granite
Granite, in Corner Inlet	—	1½	—	—	—	Granite. Reserved for National Park and set apart for preservation of native game

## ISLANDS OFF THE COAST OF VICTORIA—Continued.

Name of Island and Geographical Position.	Highest point above Sea Level, Feet.	Nearest distance to Mainland, Miles.	Greatest Length, Miles.	Greatest Breadth, Miles.	Area, Acres.	Geological Characteristics, Fauna, Flora, etc.
Griffith, off Port Fairy ...	74	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{2}$	76	Tertiary, newer basalt. The low portion at its N.E. end was formerly known as Rabbit Is. but has been joined by artificial means. Sand hummocks are the principal features of the island. On the E. end is a dioptric flash red light of the 4th order, elevated 41 ft. above sea level and visible 9 miles in clear weather. Fauna—Mutton birds in small numbers; also visited by smaller land birds from mainland. Flora—Similar to that of Lady Julia Percy Is. (see below)
Helen Rock, 6 m. W. Warrnambool	—	1 $\frac{1}{2}$	—	—	—	Tertiary, calcareous, and sandy beds. This rock is of pinnacle shape
Lady Julia Percy, 21 m. E. of Cape Nelson	155	5 $\frac{1}{2}$	1	$\frac{1}{2}$	—	Tertiary, newer basalt. Is of triangular form flat topped and cliffs on all sides. Fauna—Rabbits, some few thousand seals, penguins, mutton birds. Flora—Native mallow, coastal wattle, mosses, lichens, pig-faced weed (mesembrianthemum), coarse grasses
Latrobe ...	—	—	—	—	—	See Snake Island
Lawrence Rocks, 1 m. S.E. of Danger Point, near Portland	132	1 $\frac{1}{2}$	—	—	—	Tertiary, newer basalt. Two small but conspicuous islets, visited by gannets, whale birds, mutton birds, penguins. On smaller islet—cormorants, black cheeked falcons. Flora—Mesembrianthemum (aquilaterale), moss, lichen
Little Dog, near Welshpool ...	—	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	170	Tertiary, sand, mud. See remarks Dog Isd.
Little Snake, N.W. Snake Isd.	—	$\frac{1}{2}$	3	1 $\frac{1}{2}$	1200	Tertiary, sand, and mud. Flat, sandy loam. Connected with Snake Isd. at low water. Vegetation—Messmate and gum, honey-suckle, ti-tree, heath, and bracken
Mangrove, in Corner Inlet ...	—	—	1 $\frac{1}{2}$	$\frac{1}{2}$	750	Tertiary, sand and mud
Merri, 100 yds. S.E. Pickering Point, Warrnambool	47	1 $\frac{1}{2}$	1 $\frac{1}{2}$	$\frac{1}{2}$	14	Tertiary, calcareous, and sandy beds. Connected with the shore at low water
Middle, near Warrnambool ...	18	$\frac{1}{2}$	—	—	—	Tertiary, calcareous, and sandy beds. This island, together with Merri Is. and Breakwater Rock, form the Warrnambool Harbour, and is almost joined by rocks to Merri Island
Mud, in Port Phillip Bay ...	—	3 $\frac{1}{2}$	1	$\frac{1}{2}$	—	Tertiary, raised beaches, sand, and mud. Low mud and sand banks. Fauna—Frequented by storm petrel (pelagodroma marina) and hosts of other sea birds. About 40 species of birds use island as a nesting place. Flora—About 20 varieties
Norman, 1 $\frac{1}{2}$ m. S. of Tongue Point, Wilson's Promontory	315	1 $\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	125	Granite. May be known by its two peaks, the highest and northern of which is 315 ft. Reserved for National Park purposes. Fauna—Penguins, mutton birds, Cape Barren geese, hooded dotterel, oyster catchers. Flora—Mesembrianthemum, coarse grass
Notch ...	—	—	—	—	—	See Seal or Direction Group
Pelican Islet, in Western Port	4	$\frac{1}{2}$	$\frac{1}{2}$	1 $\frac{1}{2}$	—	Tertiary, older basalt
Phillip, at entrance ..	340	$\frac{1}{2}$	12	5 $\frac{1}{2}$	24300	Tertiary, older basalt, granite. 21,500 acres alienated. Fauna—Mutton birds, petrels, penguins, wallabies, rabbits and hares, snakes, lizards. Flora—Similar to mainland
Quail, in Western Port ...	—	60 yds	—	—	2000	Tertiary, sand, and mud. A low, marshy island, scrub covered (ti-tree)
Rabbit, E. of Wilson's Prom.	194	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	50	Granite. Reserved for National Park. Is a good mark for vessels proceeding northward to Corner Inlet
Rabbit Rock, between Rabbit Island and the mainland	50	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	—	Granite. Fauna—Rabbits (introduced), penguins, silver gulls, oyster catchers. Flora—Mesembrianthemum, coarse grasses
Rag ...	—	—	—	—	—	See Seal or Direction Group
Raymond, E. of Paynesville...	—	$\frac{1}{2}$	3 $\frac{1}{2}$	1	1950	Tertiary, sand, and mud. 1310 ac. alienated
Reef, in the east arm, Western Port	—	$\frac{1}{2}$	$\frac{1}{2}$	1 $\frac{1}{2}$	—	Tertiary, older basalt. Surrounded by rocks that also connect it with mainland

## ISLANDS OFF THE COAST OF VICTORIA—Continued.

Name of Island and Geographical Position.	Highest point above Sea Level. Feet.	Nearest distance to Mainland. Miles.	Greatest Length. Miles.	Greatest Breadth. Miles.	Area. Acres.	Geological Characteristics, Fauna, Flora, etc.
Rigby (1) in Lake King ...	—	$\frac{1}{2}$	$1\frac{1}{2}$	$\frac{1}{2}$	350	Tertiary, sand, and mud. Except the alienated land this island is reserved for public purposes. On an iron beacon, 28 ft. above sea level, is a fixed white light (shows red between S. 40 E. and S. 86 E.) 40 a. alien.
Rotamah (1) at entrance Lake Reeve, off Sperm Whale Hd.	—	$\frac{1}{2}$	$2\frac{1}{2}$	$\frac{1}{2}$	680	Tertiary, sand, and mud. 88 ac. alienated
Rotten (1) in Lake Victoria ...	—	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	36	
Sandstone, in Western Port ...	50	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	55	Palæozoic, sandstone, and slate. 55 a. alien.
Seal or Direction Group—						
Seal, 16 m. N.E. Wilson's P.	154	$9\frac{1}{2}$	$2\frac{1}{2}$	$\frac{1}{2}$	45	Granite
Notch, 1 m. S.E. of Seal Isd.	123	$10\frac{1}{2}$	$1\frac{1}{2}$	$\frac{1}{2}$	20	"
Rag, $\frac{1}{2}$ m. S. of Notch Island	94	$10\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	12	"
Cliffy, $1\frac{1}{2}$ m. S.E. "	144	$11\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	20	Granite. Fauna—A few hundreds of fur seals, penguins, mutton birds, terns. Flora—Mesembrianthemum, coarse grass
Shellback, $1\frac{1}{2}$ m. N.W. of Tongue Point, Wilson's Prom.	357	$1\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	70	Granite. The northernmost of the islands on the W. coast of Wilson's Promontory. Permanently reserved for National Park purposes. Summit 357 ft. high. Fauna—Penguins, mutton birds. Flora—Mesembrianthemum, coarse grass
Snake or Latrobe, between Corner Inlet and Port Albert	60	$1\frac{1}{2}$	$8\frac{1}{2}$	3	11500	Tertiary, sand and mud
Snake (1) in Lake King ...	—	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	7	
St. Margarets or McCrae in Shoal Inlet, 5 m. N.E. of Port Albert	72	$\frac{1}{2}$	$4\frac{1}{2}$	$2\frac{1}{2}$	4500	Tertiary, sand and mud. Flat sandy loam. Vegetation, small gum, ti-tree, bracken, heath, and coarse tussocky grass. 22 ac. alienated
Sunday, 2 m. S.W. Port Albert	41	$1\frac{1}{2}$	$4\frac{1}{2}$	2	2650	Tertiary, sand, and mud. 1858 ac. alien.
Swan, in Port Phillip Bay ...	—	$\frac{1}{2}$	2	1	773	Tertiary, raised beaches, sand, and mud. Flora and fauna similar to Mud I., except that petrels are absent. Brown snakes occasionally met with. 773 ac. alienated
The Skerries (Rocks) South of Wingan Pnt., Croajingolong	42	—	—	—	—	Granite. Three in number, height 42 feet above the sea. Small colony of fur seals.
Tortoise, in Western Port ...	101	$1\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	220	Tertiary, older basalt. 174 ac. alienated
Tullaburga, 3 m. W. Gabo Isd.	28	—	—	—	—	Granite, (?) Covered with mesembrianthemum & coarse grass. Infested by rabbits
Unnamed (1) one of a group in Lake Victoria	—	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	56	Tertiary, sand, and mud. Separated from Waddy Is. and Jubilee Head by narrow channels
Unnamed (1) one of a group in Lake Victoria	—	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	20	Tertiary, sand, and mud. Separated from Waddy Is. and Jubilee Head by narrow channels
Unnamed (Two) near Wilson's Promontory	—	—	—	—	—	See Glennie group
Unnamed, nr. Wilson's Prom.	—	—	—	—	—	See Anser group
Unnamed (1) in Lake Reeve ...	20 y	$1\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	—	Tertiary, sand, and mud
Unnamed (1) S. end Lake Reeve	—	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	270	Tertiary, sand, and mud. 230 ac. alienated
Waddy (1) in Lake Victoria ...	—	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	56	"
Wallaby (1)	—	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	12	"
Wattle, 1 m. S.E. of Wilson's Promontory	270	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	60	Granite. Permanently reserved for National Park purposes. Flora—Mesembrianthemum, coarse grass, etc. Fauna—Penguins, mutton birds, oyster catchers

NOTE.—(1) Islands in the Gippsland Lakes. Slightly undulating with sand ridges. Vegetation—Apple, honeysuckle, ti-tree, and bracken.

4. **Queensland.**—The accompanying information regarding the islands off the coast of Queensland has been compiled from particulars supplied by the Lands Department of that State. These islands are all Crown lands, except where mentioned.

## ISLANDS OFF THE COAST OF QUEENSLAND.

Name of Island.	Geographical Position.		Distance from Main'nd. Miles	Area in Acres.	Description.
	Lat. S.	Long. E.			
Wellesley Group—					
Fowler ...	17 08	139 38	18	300	
Allen ...	17 03	139 19	3	2,600	
Horseshoe ...	17 01	139 21	6	400	
Bountiful, North	16 40	139 55	46	1,900	
South	16 43	139 55	49	200	
Pisonia ...	16 30	129 57	57	500	
Forsyth ...	16 49	139 13	7	5,100	
Mornington ...	16 35	139 30	12	217,600	Sandy, about 300 feet high
Bentinck ...	17 04	139 35	14	38,000	Low and woody, desert sandstone
Sweers ...	17 06	139 42	20	3,800	104 feet high
Deliverance ...	9 31	141 35	100	800	
Kassa ...	9 12	142 18	99	800	
Turnagain ...	9 34	142 17	76	1,950	
Maat Kaua ...	9 11	142 05	98	1,400	
Adabadana Kaua	9 12	142 03	98	300	
Kaua ...	9 11	142 02	99	2,500	
Talbot ...	9 16	142 13	96	5,900	Low and swampy
Belle Vue Group—					
No. 1 ...	9 56	142 09	56	40	
No. 2 ...	9 56	142 10	56	60	
No. 3 ...	9 56	142 10	55½	90	
No. 4 ...	9 55	142 11	56	35	
No. 5 ...	9 55	142 11	56	20	
No. 6 ...	9 56	142 11	55½	30	
No. 7 ...	9 56	142 11	55	40	
Jervis ...	9 57	142 11	53	1,900	Sandy on N.W., rocky on S.E., 525 feet high
North No. 1 ...	9 57	142 13	54	1	Rocky
No. 2	9 57	142 13	54	1	"
Scott, North	9 58	142 13	53	3	"
South	9 58	142 13	53	1	"
Florence ...	9 57	142 13	53½	25	" 165 feet high
Passage ...	9 59	142 15	51	15	" 156 "
Rond ...	10 05	142 16	44	20	" "
North Possession	10 05	142 20	43	20	" 200 "
Tobin ...	10 06	142 21	41	3	" "
Portlock ...	10 07	142 22	40	10	" 205 "
North ...	10 02	142 08	50	30	" "
South ...	10 03	142 08	49	10	" "
Farewell No. 1	10 03	142 04	51	10	
No. 2	10 03	142 04	51	2	
Tree ...	10 04	142 05	49	20	
Round ...	10 05	142 06	48	10	
Obelisk ...	10 06	142 06	47	10	
Flat ...	10 07	142 05	46	10	
Mulgrave ...	10 07	142 09	40	22,200	Low and wooded on shores, rocky hills in centre, 686 feet high
Banks ...	10 11	142 16	32	39,330	Wooded near the coast, with Mt. Augustus in centre, 1310 feet
Green ...	10 12	142 07	40	35	
Clarke ...	10 12	142 09	39	65	
High ...	10 12	142 10	38	35	
Barney ...	10 13	142 10	37	165	
Browne ...	10 13	142 09	38	50	
Duncan Group—					
Spencer ...	10 17	142 06	35	100	
Phipps ...	10 16	142 06	36	140	
Whale ...	10 16	142 05	38	150	Rocky
Wilson, North	10 13	142 05	41	10	
Middle	10 14	142 05	40	100	Rocky
South	10 14	142 05	39	40	
Canoe ...	10 20	142 07	32	13	
West ...	10 21	142 03	34	300	
Hawkesbury ...	10 22	142 08	29	960	Rocky, 560 feet high
Channel ...	10 21	142 14	28	5	
Round ...	10 32	142 12	19	12	
Hammond ...	10 33	142 12	17	3,500	Rocky, 514 feet high
Goode ...	10 34	142 10	20	400	" 327 lighthouse
Booby ...	10 36	141 55	35	15	63 feet high, lighthouse



## ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

Name of Island.	Geographical Position.		Distance from Mainland, Miles	Area in Acres.	Description.
	Lat. S.	Long. E.			
Friday...	10 36	142 10	18	880	366 feet high
Thursday...	10 35	142 13	16	800	374 " shipping guide
Wednesday...	10 32	142 19	14	1,500	303 "
Tuesday, North...	10 33	142 21	12	20	145 "
" South...	10 33	142 21	12	40	120 "
Horn...	10 36	142 17	10	11,970	Mangrove swamp on N.W., wooded and hilly on S. and E., 376 feet, granite
Red Wallis...	10 51	142 02	10	20	Rocky, 60 feet high
Woody Wallis...	10 53	142 02	8	50	40 "
North-west Islet...	10 39	142 07	18	10	
Prince of Wales...	10 40	142 11	10	47,880	High and rocky, 761 feet
Packe...	10 44	142 14	12	110	
Turtle...	10 44	142 16	10	16	
Chreopo...	10 41	142 17	9 <sup>1</sup> / <sub>2</sub>	5	
Entrance...	10 43	142 18	8 <sup>1</sup> / <sub>2</sub>	1,000	Hilly
Little Woody...	10 43	142 21	5 <sup>1</sup> / <sub>2</sub>	20	
Great Woody...	10 42	142 21	3 <sup>1</sup> / <sub>2</sub>	120	
Meddler...	10 42	142 23	3	70	
Barn...	10 50	142 19	3	30	
Red...	10 50	142 22	3 <sup>1</sup> / <sub>2</sub>	90	
Dayman...	10 45	142 23	2 <sup>1</sup> / <sub>2</sub>	120	
Possession...	10 43	142 24	1 <sup>1</sup> / <sub>2</sub>	1,100	
High...	10 43	142 25	1 <sup>1</sup> / <sub>2</sub>	70	
East Strait...	10 30	142 27	14	10	
Double...	10 28	142 27	16	100	Rocky, 218 feet high
Travers...	10 22	142 22	24	25	98 feet high
Mt. Ernest...	10 15	142 29	29	330	Rocky, 233 feet high
Burke...	10 11	142 31	33	160	" 400 "
Saddle...	10 10	142 31	36	170	" 490 "
Tauan...	10 10	142 41	37	90	180 feet high
Kauamag...	9 25	142 32	83	750	795 "
Saibai...	9 22	142 42	87	1,000	
Gabba...	9 24	142 40	84	25,340	Low and swampy
Murray Group—	9 45	142 38	61	1,100	
Wyer...	9 57	144 02	103	50	
Dowar...	9 57	144 01	102	160	605 feet high
Maer...	9 55	144 03	105	500	750 "
Darney...	9 35	143 45	107	960	610 "
Nepean...	9 35	143 39	103	20	
Stephens...	9 31	143 33	102	70	
Campbell...	9 34	143 30	96	45	
Dalrymple...	9 37	143 19	87	160	
Keats...	9 41	143 26	88	30	
Marsden...	9 43	143 22	84	30	
Bourke Group—					
No. 1...	9 50	143 25	81	20	Wooded and surrounded by coral reefs
No. 2...	9 52	143 19	75	15	
No. 3...	9 52	143 24	78	35	
No. 4...	9 53	143 29	82	50	
Yorke...	9 45	143 25	84	280	
Rennel...	9 46	143 16	77	240	
Aureed...	9 58	143 18	68	160	
Arden...	9 52	143 10	67	10	
Cocoa-nut...	10 03	143 05	54	120	Cocoa-nut trees
Dove...	10 00	143 02	55	30	
Warrior...	9 48	142 58	64	120	
Dungeness...	9 51	142 55	59	1,500	
Turtle-backed...	9 54	142 46	53	320	
Long...	10 02	142 51	46	1,200	
Bet...	10 09	142 49	40	40	
Sue...	10 13	142 50	36	60	
Poll...	10 16	142 50	34	40	
Salter...	10 36	142 38	10	10	112 feet high
Little Adolphus...	10 36	142 37	8 <sup>1</sup> / <sub>2</sub>	320	139 "
Eborac...	10 41	142 32	1 <sup>1</sup> / <sub>2</sub>	15	
Tree...	10 42	142 36	1 <sup>1</sup> / <sub>2</sub>	5	40 "
York...	10 41	142 32	2 <sup>1</sup> / <sub>2</sub>	50	275 "
Ida...	10 43	142 34	1 <sup>1</sup> / <sub>2</sub>	60	142 "
Bush...	10 43	142 36	1 <sup>1</sup> / <sub>2</sub>	20	
Mai...	10 44	142 37	2 <sup>1</sup> / <sub>2</sub>	40	
Albany...	10 44	142 36	1 <sup>1</sup> / <sub>2</sub>	1,330	294 feet high
Lacey...	10 37	142 37	8	70	Rocky, 156 feet high
Keatinge...	10 38	142 40	9	10	
Nicklin...	10 37	142 39	9	3	" 55 "

## ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

Name of Island.	Geographical Position.		Distance from Mainland, Miles	Area in Acres.	Description.
	Lat. S.	Long. E.			
Mt. Adolphus ...	10 38	142 39	7	1,400	490 feet high
Morilug ...	10 38	142 41	9	5	Rocky, 93 feet high
Akone ...	10 40	142 40	7	5	" 58 "
Tetley ...	10 44	142 43	8½	2	" 15 "
Turtle ...	10 53	142 42	4	20	Wooded and rocky, 58 feet high
Turtle-head ...	10 56	142 40	5	2,800	136 feet high
Tern ...	11 00	142 45	1	7	Wooded, 32 feet high
Thomson ...	11 02	142 45	3	3	55 feet high
Arnold ...	11 01	142 59	15	4	Wooded, 30 ft. high, surrounded by coral reefs
Sinclair ...	11 07	143 01	16	8	" 60 " " " "
Milman ...	11 10	143 01	15	60	" " " " " "
Douglas ...	11 14	142 59	12½	8	" " " " " "
Cairncross Islets—					
Cairncross East ...	11 15	142 55	8½	10	Densely wooded, 20 ft. high, sur. by coral reefs
" West ...	11 15	142 55	8	15	" 93 "
Bushy ...	11 15	142 52	5	20	28 feet high, surrounded by coral reefs
Halfway ...	11 23	142 58	7	3	Surrounded by coral reefs
East Islets—					
Cholmondeley ...	11 23	143 03	13	5	" "
Jardine ...	11 23	143 01	11	5	" "
Wallace ...	11 27	143 02	12	10	Wooded, surrounded by coral reefs
Little Boydong ...	11 29	143 02	13	5	" " "
Boydong ...	11 29	143 01	12½	40	" " "
Hannibal Group—					
Hannibal East ...	11 35	142 57	6½	8	" " "
" West ...	11 35	142 56	5½	20	" " "
Bushy Islet ...	11 35	142 54	3½	2	20 feet high, surrounded by coral reefs
Macarthur Group—					
No. 1 ...	11 44	142 59	9	3	Wooded, surrounded by coral reefs
No. 2 ...	11 44	142 59	9	3	" " "
No. 3 ...	11 45	142 59	9	5	" " "
No. 4 ...	11 45	142 59	9	3	" " "
Saunders ...	11 42	143 10	15	8	" " "
Sir Charles Hardy Grp.					
North ...	11 54	143 27	15½	120	320 feet high " "
South ...	11 55	143 28	16	180	" " "
Cockburn Group—					
Pig ...	11 50	143 19	10	10	Wooded, 100 ft. high, surrounded by coral reefs
Manley ...	11 51	143 18	9	8	" 90 "
Bootie ...	11 51	143 18	9	10	" surrounded by coral reefs
Magra Islet ...	11 51	143 17	8	8	" " "
Bird Group—					
No. 1 ...	11 46	143 05	9	7	60 feet high " "
No. 2 ...	11 46	143 06	9	60	Wooded " "
No. 3 ...	11 47	143 05	8	10	" " "
No. 4 ...	11 48	143 05	7	10	Low and wooded, surrounded by coral reefs
Rodney ...	11 53	143 06	10	10	" " "
Sunday ...	11 56	143 13	14½	30	157 feet high
Home Group—					
Orton ...	12 00	143 14	3	20	145 "
Gore ...	12 00	143 15	3	130	145 "
Hicks ...	11 59	143 16	1½	400	80 "
Clerke ...	11 58	143 17	3	80	115 "
Harvey ...	11 58	143 16	1½	15	" "
Perry ...	11 58	143 15	1	10	50 "
Nob ...	11 57	143 16	2	5	85 "
Haggerstone ...	12 02	143 18	5½	90	245 "
Kay Islet ...	12 13	143 16	10½	1	Lightship in vicinity
Piper Group—					
Fisher ...	12 16	143 14	7	5	Rocky, 40 feet high, beacon
Farmer ...	12 15	143 14	8	6	" 40 " "
Baird ...	12 15	143 13	7½	2	" 40 " "
Beesley ...	12 15	143 12	7½	1	" 6 " "
Forbes Group—					
No. 1 ...	12 17	143 24	12½	160	" 295 "
No. 2 ...	12 18	143 24	12	40	" "
No. 3 ...	12 18	143 25	13	30	" "
Pigeon ...	12 31	143 17	1	5	50 feet high
Rocky ...	12 35	143 25	1	12	108 "
Restoration ...	12 37	143 27	1	140	380 "
Lloyd ...	12 46	143 24	1	120	236 "
Chapman ...	12 53	143 36	5	15	Wooded, 20 feet high, beacon
Rocky ...	12 53	143 33	1½	8	130 feet high
Sherrard Group—					
East ...	12 59	143 37	7½	2	" "

## ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

Name of Island.	Geographical Position.		Distance from Mainland, Miles.	Area in Acres.	Description.
	Lat. S.	Long. E.			
Sherrard Group—					
West .....	12 59	143 36	7	3	Wooded
Night .....	13 11	143 34	33	25	
Binstead .....	13 13	143 34	4	2	10 feet high
Lowrie .....	13 16	143 36	5	5	Wooded
Ellis .....	13 22	143 41	8	2	6 feet high, beacon
Morris .....	13 30	143 43	9	10	Wooded, 8 feet high, surrounded by coral reef
Fife .....	13 39	143 43	11	15	8 feet high
Hay .....	13 40	143 41	9	5	Wooded, 5 feet high
Wilkie .....	13 46	143 38	7	80	" 4 "
Hannah .....	13 52	143 43	12	160	" 3 "
Felican .....	13 55	143 50	12	10	" 8 "
Stainer .....	13 57	143 50	11	1	" 6 " beacon
Burkitt .....	13 56	143 45	7	80	" "
Cliff Group—					
No. 1 .....	14 13	143 46	4	70	76 feet high
No. 2 .....	14 14	143 46	3	5	34 "
No. 3 .....	14 14	143 47	4	30	49 "
Flinders Group—					
Maclear .....	14 13	144 15	3	30	80 "
Denham .....	14 14	144 16	2	800	659 "
Blackwood .....	14 13	144 13	2	400	583 "
Flinders .....	14 11	144 15	4	3,000	1051 "
Stanley .....	14 09	144 14	4	1,800	674 "
King .....	14 06	144 20	11	350	Low and woody
Pipon .....	14 08	144 31	2	5	Wooded, lighthouse
Hales .....	14 11	144 32	4	5	53 feet high
Rocky Point .....	14 14	144 35	4	10	67 "
Barrow Group—					
No. 1 .....	14 21	144 39	4	10	115 "
No. 2 .....	14 21	144 39	4	10	115 "
Stapleton .....	14 19	144 51	13	5	15 " surrounded by coral reef
Noble .....	14 30	144 46	2	100	400 " granite
Howick Group—					
Coquet .....	14 32	145 00	7	80	52 "
Houghton .....	14 31	144 59	7	140	Wooded
Newton .....	14 30	144 55	7	120	" "
Howick .....	14 30	144 59	7	850	" 185 feet high
Warson .....	14 28	144 54	9	20	" "
Beanley .....	14 26	144 53	10	10	20 feet high
Ingram .....	14 25	144 53	11	10	Wooded
Coombe .....	14 24	144 54	12	5	" "
Bewick .....	14 26	144 49	7	320	" "
Colé Group—					
Hampton .....	14 34	144 53	3	40	" "
Leggatt .....	14 33	144 52	3	30	30 feet high
Sinclair .....	14 33	144 54	3	5	Rocky
Morris .....	14 33	144 54	3	5	" "
Murdoch .....	14 36	144 55	1	5	" "
Kew Islet East .....	14 44	145 06	5	5	Wooded
" West .....	14 44	145 05	4	5	" "
Eu .....	14 39	145 15	6	140	Low and wooded
Rocky Islet .....	14 52	145 20	10	70	Wooded, 150 feet high
Turtle Group—					
No. 1 .....	14 42	145 12	9	25	" "
No. 2 .....	14 43	145 12	8	10	" "
No. 3 .....	14 44	145 12	7	50	" "
No. 4 .....	14 44	145 11	7	40	" "
North Direction .....	14 45	145 31	17	100	616 feet high
South .....	14 50	145 32	13	100	583 "
South .....	14 42	145 27	16	50	405 "
Saddle .....	14 42	145 27	16	140	" "
Lizard .....	14 40	145 28	17	500	1179 feet high
Eagle .....	14 42	145 23	13	5	Low
Two Isles—					
No. 1 .....	15 01	145 26	5	70	Wooded, 56 feet high
No. 2 .....	15 02	145 27	6	15	" "
Wooded .....	15 06	145 23	6	170	Low
Three Isles—					
No. 1 .....	15 07	145 25	9	70	Low and wooded
No. 2 .....	15 07	145 25	9	5	" "
No. 3 .....	15 07	145 26	10	50	" "
Rocky .....	15 36	145 20	1	20	Lighthouse

## ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

Name of Island.	Geographical Position.		Distance from Main Ind. Miles	Area in Acres.	Description.
	Lat. S.	Long. E.			
<b>Hope Group—</b>					
North ...	15 44	145 28	6	10	Wooded
South ...	15 45	145 27	5	10	
Snapper ...	16 18	145 30	1	140	376 feet high
Low ...	16 23	145 34	8	5	Wooded, lighthouse
Double ...	16 44	145 41	1	60	258 feet high
Haycock ...	16 44	145 42	1	5	113 "
Green ...	16 46	145 59	8	30	Wooded
Fitzroy ...	16 56	146 00	2	750	849 feet high
<b>Frankland Group—</b>					
High ...	17 10	146 06	3	200	570 "
Normanby ...	17 12	146 05	7	140	80 "
Russell ...	17 14	146 01	7	20	330 "
North Barnard ...	17 41	146 11	2	30	Lighthouse
South ...	17 45	146 10	3	40	
Mound ...	17 56	146 09	2	10	
<b>Family Group—</b>					
Dunk ...	17 57	146 10	2	1,400	320 acres freehold, 140 acres agricultural farm, 890 ft. high, wooded: echidna, rat, tern, pigeon
Hudson ...	18 03	146 13	9	40	270 feet high
Bowden ...	18 03	146 12	9	10	200 "
Smith ...	18 02	146 12	9	10	210 "
Combe ...	18 02	146 11	5	80	370 "
Wheeler ...	18 02	146 10	6	50	310 "
Richards ...	18 00	146 09	3	130	350 "
Thorpe ...	17 59	146 09	2	40	280 "
Garden ...	18 11	146 09	3	20	130 "
Hinchinbrook ...	18 23	146 14	1	97,280	297 ac. agricultural farm, 3650 ft. high, quartz and granite, pine and hardwood
Goold ...	18 10	146 11	3	1,600	1370 feet high
<b>Brook Group—</b>					
North ...	18 08	146 18	5	220	Wooded, 250 feet high
South ...	18 10	146 19	5	30	170 "
Eva ...	18 14	146 20	1	10	115 feet high
Agnes ...	18 21	146 20	1	20	180 "
<b>Palm Group—</b>					
Pelorus or Nth. Palm	18 33	146 30	9	700	924 "
Orpheus ...	18 37	146 30	9	2,600	565 "
Fantome ...	18 42	146 31	13	1,400	724 "
Curacoa ...	18 41	146 34	14	1,050	971 "
Great Palm ...	18 44	146 37	18	13,440	1818 " quartz
Eclipse ...	18 46	146 34	17	40	206 "
Brisk ...	18 47	146 33	16	300	229 "
Falcon ...	18 46	146 33	16	50	194 "
Esk ...	18 46	146 32	15	150	165 "
Fly ...	18 50	146 32	14	5	115 "
Havannah ...	18 50	146 33	14	320	507 "
Acheron ...	18 58	146 39	12	120	188 "
Rattlesnake ...	19 02	146 37	7	450	40 acres freehold, 377 ft. high
Herald ...	19 02	146 38	8	150	173 feet high
Nares Rock ...	19 46	148 22	15	—	26 "
Magnetic ...	19 08	146 50	2	12,160	About 250 ac. freehold, 100 ac. agricultural farm, 1628 feet high; granite
Bray ...	19 15	147 04	1	10	40 feet high
Bare ...	19 16	147 04	1	5	30 "
Bald ...	19 17	147 04	1	5	10 "
Camp ...	19 51	147 54	2	60	130 "
Holbourne ...	19 44	148 22	17	80	360 "
Stone ...	20 02	148 17	1	300	90 "
Thomas ...	20 05	148 18	1	40	
Poole ...	20 06	148 19	1	45	39 "
Middle ...	19 59	148 23	7	120	180 "
Gloucester ...	20 00	148 27	1	6,400	1870 "
Saddleback ...	20 04	148 33	1	100	322 "
Ratray ...	19 59	148 34	6	53	340 "
Eshelby ...	20 01	148 39	5	30	170 "
Grassy ...	20 09	148 38	1	230	481 "
Olden ...	20 06	148 36	2	90	269 "
Gumbrell ...	20 06	148 38	2	150	287 "
Armit ...	20 06	148 40	4	250	494 "
Double Cone ...	20 06	148 44	5	60	
Langford ...	20 05	148 54	13	10	250 "
Arkhurst ...	20 04	148 54	14	5	70 "
Hayman ...	20 03	148 54	14	750	844 "

## ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

Name of Island.	Geographical Position.		Distance from Main Ind. Miles	Area in Acres	Description.
	Lat. S.	Long. E.			
Dumbell ...	20 11	149 02	15½	40	182 feet high
Deloraine ...	20 10	149 05	19½	80	114 "
Border... ..	20 10	149 03	16½	800	747 "
Hook ...	20 07	148 56	9½	1,150	1478 "
Denman ...	20 17	148 52	3	40	250 "
Planton ...	20 16	148 52	3½	50	203 "
West Molle ...	20 15	148 50	1½	80	184 "
North ...	20 14	148 50	3	600	745 "
Middle " ...	20 15	148 51	3½	25	206 "
Molle ...	20 16	148 52	2	1,000	622 " wooded
Shute ...	20 18	148 49	2½	60	217 "
Cid ...	20 16	148 56	6½	900	683 "
Henning ...	20 19	148 57	6	120	227 "
Esk ...	20 14	149 04	15½	50	111 "
Peteril... ..	20 12	149 08	20½	5	20 "
Ireby ...	20 14	149 10	21½	40	164 "
Harold ...	20 15	149 10	21½	80	247 "
Edward ...	20 15	149 11	22½	150	347 "
Workington ...	20 16	149 08	18½	160	320 "
Haslewood ...	20 17	149 06	15½	1,850	666 "
Lupton ...	20 16	149 07	17½	320	"
Pine ...	20 18	149 07	16½	60	356 "
Teague ...	20 18	149 06	15	130	285 "
Whitsundy ...	20 15	149 00	6	24,300	1426 " hoop-pine
Perseverance ...	20 21	149 01	9½	60	326 "
Hamilton ...	20 21	148 59	6½	1,720	775 "
Dent ...	20 21	148 57	6	1,050	568 " lighthouse
Pine ...	20 22	148 55	3	180	340 "
Long ...	20 22	148 53	½	2,100	870 "
Pentecost ...	20 24	149 03	9	280	941 "
Cumberland Group—					
Mansell ...	20 28	149 09	13	360	630 "
Seaforth ...	20 28	149 03	7½	70	176 "
Lindeman ...	20 27	149 03	7½	1,800	712 "
Sidney ...	20 27	149 02	6½	5	125 "
Maher ...	20 25	149 09	11½	200	550 "
Brush ...	20 29	149 04	8½	5	62 "
Baynham ...	20 26	149 07	13	15	Low and cliffy
Comston ...	20 27	149 07	12	20	"
Shaw ...	20 29	149 05	7	4,000	1324 feet high
Triangle ...	20 30	149 08	12	40	150 "
Pine ...	20 30	149 06	10½	10	140 "
Keyser ...	20 31	149 06	9½	200	250 "
Thomas ...	20 33	149 07	11	680	445 "
Blackcombe ...	20 35	149 12	17	10	116 "
Silversmith ...	20 35	149 08	12	120	197 "
Anvil ...	20 37	149 05	11	10	112 "
Anchorsmith ...	20 36	149 05	10	15	267 "
Blacksmith ...	20 37	149 04	10	640	534 " nearly bare
Hammer ...	20 38	149 04	11	160	468 " wooded
Locksmith ...	20 38	149 10	16	10	Wooded
Goldsmith ...	20 40	149 10	16	960	655 feet high
Linné ...	20 40	149 12	17½	480	926 " wooded
Tinsmith ...	20 41	149 13	17½	240	456 " "
Ingot ...	20 42	149 10	14½	80	197 "
Allonby ...	20 46	149 11	13	60	212 " nearly bare
Coffin ...	20 43	149 15	17	10	180 "
Maryport ...	20 45	149 17	18	10	123 "
Brampton ...	20 48	149 17	14	1,280	720 "
Carlisle ...	20 47	149 18	16	1,200	1277 " wooded
Cockermouth ...	20 46	149 25	21½	340	651 "
Wigton ...	20 44	149 29	26	640	418 "
Aspatria ...	20 55	149 30	17½	80	160 "
Keswick ...	20 54	149 26	14½	1,300	1034 "
St. Bees ...	20 55	149 28	15	2,560	1240 "
Scawfell ...	20 52	149 37	25½	2,560	1305 "
Calder ...	20 46	149 38	31	400	441 " wooded
Bailey ...	21 01	149 34	20½	10	120 "
Derwent ...	20 58	149 47	35	200	415 " wooded
Bushy ...	20 57	150 05	54	10	40 "
Redbill ...	20 58	150 04	53½	10	93 "
Snare Peak ...	21 06	149 57	42	50	300 "
Penrith ...	21 00	149 55	42	400	490 " wooded
Tern ...	20 54	150 02	53	20	102 "

## ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

Name of Island.	Geographical Position.		Distance from Mainland, Miles.	Area in Acres.	Description.
	Lat. S.	Long. E.			
Repulse Group—					
No. 1 ...	20 34	148 53	3	80	265 feet high
No. 2 ...	20 35	148 54	3	320	
No. 3 ...	20 36	148 53	4½	210	
Midge ...	20 41	148 48	2	40	175 "
Brothers ...	20 46	148 53	1	10	
High, North ...	20 47	148 54	2½	15	
" South ...	20 48	148 54	2	10	
Mausoleum ...	20 51	148 57	1	10	
Acacia ...	20 51	148 56	1	48	
Outer Newry ...	20 50	148 57	1½	138	
Newry ...	20 50	148 56	½	180	
Wedge ...	20 55	149 04	1	20	
Slade ...	21 05	149 16	1	10	
Flat Top ...	21 09	149 16	1½	120	Lighthouse
Round Top ...	21 10	149 17	3	120	259 feet high
Victor ...	21 19	149 21	1½	40	75 " wooded
Taffy ...	21 28	149 25	1	30	166 " "
Irving ...	21 27	149 29	5	40	305 " "
Cullen ...	21 25	149 31	8	10	140 " "
Northumberland Group					
Frudhoe ...	21 19	149 41	19	1,250	1074 " "
Reid ...	21 22	149 40	15½	8	110 " "
Beverlac ...	21 27	149 53	24½	60	320 " wooded
Hull ...	21 28	149 54	25	60	272 " "
Still ...	21 28	149 56	28	8	155 " bare
Henderson ...	21 28	149 55	27½	80	260 " wooded
Noel ...	21 29	149 54	25½	240	239 " bare
Digby ...	21 29	149 55	27	250	327 " "
Keelan ...	21 29	149 55	27½	50	224 " wooded
Penn ...	21 29	149 56	28	10	110 " bare
Knight ...	21 26	149 44	15½	320	438 " "
Waratah ...	21 30	149 44	14½	30	102 " "
Double ...	21 22	149 41	24½	180	258 " bare
Minster ...	21 26	149 51	23½	160	409 " "
Renou ...	21 25	149 50	22½	10	130 " "
Elamang ...	21 28	149 41	10	20	259 " "
Curlew ...	21 35	149 49	20	1,280	520 " "
Hirst ...	21 34	149 50	22	20	154 " "
Bluff ...	21 36	149 53	25	80	300 " bare
Dinner ...	21 37	149 49	22	40	100 " "
Wallace ...	21 35	149 47	19½	20	138 " "
Tinonee ...	21 39	149 51	23½	320	620 " bare
Treble ...	21 36	149 50	23	10	130 " "
Douglas ...	21 40	149 48	20	100	276 " bare
High Peak ...	21 57	150 42	27	400	718 " "
Alnwick ...	22 01	150 24	22½	70	484 " "
Shields ...	22 00	150 24	22½	70	198 " "
Steep ...	22 02	150 28	20½	100	409 " "
Hexnam ...	22 01	150 23	21	220	353 feet high
Berwick ...	21 59	150 41	23½	20	41 " "
Tweed ...	22 00	150 40	22	60	222 " "
Morpeth ...	21 58	150 37	23½	15	110 " "
Cheviot ...	22 05	150 41	17	120	307 " "
Otterbourne ...	22 02	150 19	16	160	204 " "
Allendale ...	21 58	150 24	23	20	102 " "
Rothbury ...	22 01	150 40	21½	8	68 " "
Duke Group—					
Bamborough ...	21 55	150 07	14	320	148 " "
Marble ...	21 59	150 11	11½	1,440	484 " "
Tynemouth ...	22 00	150 08	10½	480	382 " "
Hunter ...	21 57	150 09	12	320	244 " "
Danger ...	22 01	150 10	10½	30	100 " "
Bedwell Group—					
Innes ...	21 49	149 47	20½	30	100 " "
George ...	21 50	149 48	21	300	235 " "
Poynter ...	21 50	149 49	22½	160	400 " "
Calliope ...	21 51	149 48	21	70	154 " "
Temple ...	21 36	149 30	1	240	134 " "
Ridge ...	21 40	149 40	11	40	70 " "
Westhill ...	21 49	149 30	½	960	983 " "
Connor ...	21 43	149 40	11½	160	200 " bare
Flat Group—					
Red Clay ...	21 56	149 39	10½	160	80 " "
Avoid ...	21 58	149 40	9	230	110 " "

## ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

Name of Island.	Geographical Position.		Distance from Main'nd, Miles	Area in Acres.	Description.
	Lat. S.	Long. E.			
Flat Group—					
Aquila ...	21 58	149 34	3½	400	80 feet high
Bald ...	21 57	149 35	5½	4	
Reef ...	21 57	149 37	6	8	20 "
Little ...	21 59	149 40	10	5	20 "
Flock Pigeon ...	22 08	149 35	2½	330	
Roundish ...	22 03	149 37	6	40	121 " thickly wooded
McEwen ...	22 09	149 37	3	5	30 "
Turtle ...	22 21	149 48	1	10	
Coal ...	22 09	149 53	7	20	
Westside ...	22 09	149 52	7½	20	82 "
North Point Group—					
Turn ...	21 59	149 50	15½	160	280 "
Bush ...	22 00	149 54	12½	10	30 "
Wild Duck ...	22 00	149 53	13	1,120	367 "
Long ...	22 09	149 55	2	19,520	610 "
Quail ...	22 08	150 00	2	6,880	375 "
Percy Group—					
Sphinx ...	21 31	150 10	43½	160	220 "
Pine Peak ...	21 31	150 17	44½	640	748 "
Middle ...	21 39	150 17	34½	4,480	All under grazing farm: 816 feet high
South ...	21 45	150 21	31½	4,000	632 feet high
Pine ...	21 40	150 14	35	160	224 " lighthouse
North-East ...	21 39	150 21	37½	640	440 "
Hotspur ...	21 29	150 17	48	640	527 "
Walter ...	21 39	150 21	39	60	300 "
Boat ...	21 40	150 22	38	10	25 "
Hixson ...	21 44	150 19	32	10	50 "
South-East No. 1	21 45	150 27	36	25	219 "
" No. 2	21 46	150 27	36	20	141 "
Marquis ...	22 19	150 28	10	150	128 "
Raynham ...	22 16	150 33	4	20	80 "
Bay ...	22 20	150 20	5	5	97 "
Edward ...	22 18	150 19	6	2	
Ripple ...	22 13	150 27	11	30	150 "
Cannibal Group—					
Collins ...	22 15	150 20	9	640	Wooded
Lingham ...	22 14	150 17	8	140	60 feet high
Eliza ...	22 14	150 19	9	10	
Mumford ...	22 11	150 23	14	8	60 "
Holt ...	22 13	150 23	14	5	40 "
Annie ...	22 14	150 19	10	5	
Skull Group—					
Clara ...	22 18	150 15	3	30	30 "
Sun ...	22 18	150 16	3½	15	
Osborn ...	22 17	150 15	4	30	25 "
Swan ...	22 19	150 14	1	45	188 "
Akens ...	22 21	150 17	2	360	121 "
Townsend ...	22 16	150 32	1	20,480	Under past. lease, 475 ft. high, lightly timbered
Leicester ...	22 15	150 27	10	4,160	150 feet high, wooded
Triangular ...	22 22	150 32	2	160	82 "
Hervey Group—					
Clara Group...	22 20	150 44	3	40	155 "
Dome ...	22 25	150 46	2	60	357 "
Spit ...	22 25	150 46	3	10	287 "
Entrance ...	22 29	150 48	1½	30	190 "
Quoin ...	22 34	150 49	2	10	310 "
Peak ...	22 39	150 59	8	15	400 "
Flat ...	22 44	151 01	10	70	175 "
Middle... ..	23 10	150 56	7	100	
Miall ...	23 10	150 55	7	60	
Barren ...	23 10	151 05	16	180	548 "
North Keppel ...	23 05	150 55	7	1,280	257 "
Great ...	23 10	150 59	7½		542 "
Mackenzie ...	23 31	150 53	4		147 "
Girt ...	23 22	150 50	3		
Corroboree ...	23 04	150 55	7	40	143 "
Sloping ...	23 07	150 55	7	20	202 "
Halfway ...	23 12	151 00	9½	20	
Humpy ...	23 13	151 00	9	120	
Divided ...	23 18	150 57	6	20	
Pelican ...	23 15	150 54	2½	30	151 "
Wedge... ..	23 17	150 55	3½	60	200 "
Peak ...	23 21	150 58	8	160	370 "
Flat ...	23 32	150 53	2	480	

## ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

Name of Island.	Geographical Position.		Distance from Mainl <sup>d</sup> , Miles.	Area in Acres.	Description.
	Lat. S.	Long. E.			
Hummocky ...	23 26	151 10	6	320	418 feet high
Curtis ...	23 36	151 10	4	11,200	425 ft. high, sandy and thickly wooded, permo-carboniferous and recent, 3 lighthouses
Capricorn Group—					Wooded, surrounded by coral reefs
N.W. Islet ...	23 18	151 44	34	240	
Wilson ...	23 18	151 37	47	12	" " "
Wreck ...	23 20	151 39	49	20	" " "
Heron ...	23 27	151 37	41	80	" " "
One Tree ...	23 30	152 08	42	80	" " "
Bunker Group—					
Hoskyn ...	23 49	152 18	36	20	" " "
Fairfax ...	23 51	152 23	37	40	" " "
Lady Musgrave ...	23 54	152 25	37	50	" " "
Erskine ...	23 30	151 47	35	40	Low, sandy, and scantily vegetated
Mast Head ...	23 33	151 45	31	160	Wooded, surrounded by coral reefs
Passage ...	23 46	151 12	1	30	
Mud ...	23 49	151 15	1	40	
Picnic ...	23 49	151 17	1	50	
Bushy ...	23 50	151 22	2	5	
Quoin ...	23 49	151 18	2	140	
Facing ...	23 49	151 24	1	7,200	Under pastoral lease; 105 feet high; permo-carboniferous and granite; lighthouse
Barubba ...	24 44	152 25	1	1,280	
Luck ...	25 21	153 01	5	5	
Lady Elliot ...	24 07	152 45	48	80	Wooded, lighthouse
Little Woody ...	25 19	153 02	6	8	Shipping guide
Woody ...	25 18	153 00	2	2,240	Two lighthouses
Fraser ...	24 44	153 10	1	42,048	About 100 acres freehold, 800 ft. high, sandy & wooded, Trias-Jura (lower?), hardwood & cypress pine, lighthouse & several ship. guides
Mangrove ...	25 22	152 58	2	160	
Walsh ...	25 29	152 59	1	320	
Moonboom ...	25 36	152 57	3	320	Shipping guide
Stewart ...	25 37	152 59	3	320	
Parker ...	27 24	153 10	1	320	Low and wooded, shipping guide
Fisherman ...	27 24	153 12	1	480	" "
Bribie ...	26 59	153 09	4	640	" "
Green ...	27 25	153 15	2	160	944 acres freehold, low wooded sand ridges, Trias-Jura (upper?), cypress pine
King ...	27 27	153 15	2	40	
Moreton ...	27 10	153 25	9	45,760	Low and wooded
Mud ...	27 20	153 16	5	800	Few ac. as town allotments, 910 feet high, sandy Trias-Jura (upper?), lighthouse & ship. guides
St. Helena ...	27 23	153 15	4	480	Mostly mud and mangrove, beacon
Peel ...	27 30	153 23	3	1,440	Penal estab., 150 ft. high, good soil, ship. guide
Bird ...	27 30	153 24	5	5	23 feet high, beacons
Goat ...	27 30	153 24	5	5	Sandy
Pannikin ...	27 37	153 21	3	800	Mangrove
Tindappah ...	27 37	153 21	3	320	All freehold, mangrove
Ngudooroo ...	27 37	153 24	3	320	" 120 feet high, good soil
Tabby Tabby ...	27 44	153 23	1	240	" partly good soil
Karragarra ...	27 38	153 23	2	320	" 120 feet high, partly good soil
Kangaroo ...	27 46	153 24	1	1,120	
Woogoompah ...	27 47	153 25	1	1,280	All freehold, wooded
Coochie-mudlo ...	27 34	153 21	2	320	About 50 acres as town allotments, partly good soil, some cypress pine
Macleay ...	27 37	153 23	2	1,440	All hld., 120 ft. high, partly good soil, h'd wood
Russell ...	27 40	153 24	2	3,520	" 250
Stradbroke ...	27 40	153 27	2	78,720	About 100 acres freehold, 739 feet high, chiefly sand hills with stunted timber, some cypress pine and hardwood. Trias-Jura (upper?)



5. **South Australia.**—The accompanying information in regard to the Islands of South Australia has been compiled from particulars furnished by the Lands Department of that State.

## ISLANDS OFF THE COAST OF SOUTH AUSTRALIA.

Names of Islands.	Geographical Position.		Distance from Mainland Miles	Area in acres (approximate).	Description.
	Lat. S.	Long. E.			
Albatross (c) ...	35 3	136 12	12	15	Rocky Island, South of Thistle Island.
Althorpe Islands (c) ...	35 22	136 54	5	300	Three islets with several rocks and reef, highest part 285 ft., lighthouse, cable communication
Beatrice (c) ...	35 38	137 43	24	25	Near Nepean Bay, low and sandy.
Bicker Islands (c) ...	34 44	135 58	3	50	Two small rocky islands near Port Lincoln.
Blyth (c) ...	34 33	136 18	12	10	In Sir Joseph Banks' Group.
Boston (f) ...	34 42	135 57	2	2,000	Near Pt. Lincoln, hilly, light wooded, 319 ft. high
Boucaut (c) ...	34 38	136 22	17	25	In Sir Joseph Banks' Group.
Busby (c) ...	35 37	137 40	26	25	Near Nepean Bay, low and sandy.
Cap (c) ...	33 57	135 8	5	20	West of Eyre's Peninsula.
Casuarina (c) ...	36 3	136 42	57	10	Near Cape De Coudie, known as 'The Brothers'
Dalby (c) ...	34 33	136 15	8	30	In Sir Joseph Banks' Group.
Dog (c) ...	32 39	133 22	20	150	One of St. Francis' Group in Nuyt's Archipelago
Duffield (c) ...	34 39	136 20	15	22	In Sir Joseph Banks' Group, includes sand spit, and rock.
Eba (c) ...	32 41	134 17	1	300	In Streaky Bay.
Egg (c) ...	32 38	133 21	20	150	One of St. Francis' Group, in Nuyt's Archipelago
English (l) ...	34 38	136 12	9	10	In Sir Joseph Banks' Group.
Evans (c) ...	32 22	133 30	13	300	In Nuyt's Archipelago.
Ewe (l) ...	35 33	138 57	1	548	In Lower Murray, swampy.
Eyres (c) ...	32 21	133 50	3	2,500	In Nuyt's Arch., sandridges & mangrove swamps
Fenelon (c) ...	32 34	133 20	27	200	In St. Francis' Grp., steep, rocky, highest 189 ft.
Flinders (l) ...	33 44	134 31	18	9,000	Largest of Investigator's Group, limestone cliff, sandy beach, undulating, wooded, pasture.
Franklin Islands (c) ...	32 27	133 39	12	1,000	Two ids. and a pyramidal rock in Nuyt's Arch.
Freeling (c) ...	32 29	133 22	20	40	One of St. Francis Group, Nuyt's Archipelago.
Four Hummocks The (c)	34 44	135 3	17	200	Four Islands in Whidbey Group, highest 362 ft.
Gambier Islands ...	...	...	...	2,500	Comp. Wedge Id. and 3 islets, Spencer's Gulf.
Germeins (c) ...	33 13	134 41	1	500	In Venus Bay.
Goat (c) ...	32 18	133 32	10	700	In Nuyt's Archipelago, highest part 195 ft.
Goose (c) ...	34 27	137 23	3	5	In Spencer's Gulf, near Port Victoria.
Godfrey's Islands (c) ...	37 5	139 43	2	100	Near Cape Jaffa.
Granite (c) ...	35 33	133 37	1	80	Connected mainland by jetty, highest 140 ft., breakwater, pleasure resort, in Encounter Bay
Grantham (c) ...	34 46	135 53	1	100	Near Port Lincoln.
Greenly (c) ...	34 49	134 49	18	500	S.W. Coffin Bay, peaked summit 755 ft. high, locally known as "The Cow and Calf."
Grindal (l) ...	34 54	136 2	2	250	In Thorny Passage, 84 ft. high.
Harts (c) ...	32 35	133 10	27	30	One of St. Francis' Group, Nuyt's Archipelago
Hareby (c) ...	34 34	136 19	12	60	In Sir Joseph Banks' Group.
Hindmarsh (f 11,047 ac.)	35 30	138 54	1	11,500	Flat and swampy, near mouth of Murray River.
Hopkins (l) ...	34 57	136 4	3	400	Near Port Lincoln.
Investigator's Group ...	...	...	...	...	W. of Eyre's Peninsula, consists Waldegrave, Topgallant, Ward, Pearson's & Flinders Ids.
Jones (l) ...	33 11	134 23	1	22	In Beard's Bay.
Kangaroo (f 112,039 ac., l 417,125 ac., c 546,036 ac.)	35 32	136 34	1	1075,200	3 lighthouses, cable communication, highest point 900 ft., reserve for native fauna & flora.
Kirkby (c) ...	34 32	136 13	7	50	In Sir Joseph Banks' Group.
Lacy Islands (c) ...	32 23	133 23	13	300	Two rocky islets & detached reef in Nuyt's Arc.
Langton or Milne (l) ...	34 35	136 15	10	60	In Sir Joseph Banks' Group.
Lewis (l) ...	34 57	136 3	2	75	Near Port Lincoln.
Liguanea (c) ...	34 59	135 38	3	500	S. of Eyre's Peninsula, highest part 127 ft., flat and barren, cliffs on coast, coral bottom.
Little (c) ...	34 56	136 2	2	50	Near Port Lincoln.
Lounds (c) ...	32 16	133 23	5	50	In Nuyt's Archipelago, highest part 67 ft.
Louth (c) ...	34 34	135 58	2	450	In Louth Bay, Spencer's Gulf, highest part 76 ft., rocky points and sandy bays.
Long (l) ...	35 31	139	1	1,315	In mouth of River Murray, swampy.
Lusby (c) ...	34 32	136 16	9	30	In Sir Joseph Banks' Group.
Marum (c) ...	34 30	136 15	8	10	
Masilion (c) ...	32 33	133 20	25	500	One of St. Francis' Group, Nuyt's Archipelago.
Milne or Langton (l) ...	34 35	136 15	10	60	In Sir Joseph Banks' Group.
Mundoo (f 2202 a., l 1942 a.)	35 32	138 56	1	3,144	In mouth of River Murray, sandy and swampy.
Neptune Ids.—South (c)	35 22	136 7	26	500	Three small rocky islands, lighthouse, granite cliff N.W. of Isle, 160 ft. high.
North (c) ...	35 14	136 4	18	600	
Nobby (c) ...	35 58	137 18	52	30	In Vivonne Bay, South of Kangaroo Island.
Nuyt's Archipelago ...	...	...	...	...	Comprises 4 Groups: St. Francis Isles, Franklin Ids., Purdies Ids., Lacy Isles, also St. Peter's, Goat, Eyre's and Evans' Islands.
Olive (c) ...	32 44	133 58	5	30	Near Streaky Bay, rocky, 60 ft. high.

## ISLANDS OFF THE COAST OF SOUTH AUSTRALIA—Continued.

Name of Island.	Geographical Position.		Distance from Mainland, Miles	Area in Acres (approximate).	Description.
	Lat. S.	Long. S.			
Pages, The (c) ...	35 45	138 18	8	50	Two groups of barren rocks about 60 ft. high, in Backstair's Passage, area 100 ac. at low water.
Partney (c) ...	34 31	136 15	89	100	In Sir Joseph Banks' Group.
Pearsons (c) ...	33 57	134 18	40	700	In Investigator's Group, sanctuary for seals and wallaby.
Perforated (c) ...	34 44	135 11	10	300	In Whidbey Group, S.W. of Eyre's Peninsula.
Penguin (c) ...	37 30	140	2	5	Rivoli Bay North, lighthouse station.
Pelorus (c) ...	36 5	137 33	5	50	Three islets S. of E. part of Kangaroo Island.
Price (c) ...	34 42	135 21	1	145	Near Coffin's Bay, one of Whidbey Group.
Purdies (c) ...	32 16	132 17	5	100	The N.W. of Nuyt's Archipelago, islet & rocks.
Pullens (c) ...	35 33	138 42	4	25	Near Port Elliot, rocky.
Rabbit No. 1 (l) ...	34 36	136	3	50	N.E. Port Lincoln.
" 2 (c) ...	34 51	136 1	3	20	S.E. "
" 3 " ...	34 36	135 27	1	10	In Coffin's Bay.
Reevesby (l) ...	34 30	136 17	10	915	In Sir Joseph Banks' Group.
Reedy (c) ...	35 33	139 1	2	387	Within mouth of River Murray.
Rocky No. 1 (c) ...	34 15	135 18	3	40	North of Coffin's Bay rocky islet, 17 ft. high.
" 2 " ...	34 50	134 44	28	20	S.W. Eyre's Peninsula, granite islet, 17 ft. high.
Roxby (l) ...	34 35	136 20	13	200	In Sir Joseph Banks' Group, highest part 74 ft.
Seal (c) ...	35 34	138 33	2	3	In Encounter Bay, rocky islet.
Sibsey (l) ...	34 33	136 11	10	50	In Sir Joseph Banks' Group, highest part 80 ft.
Sinclair (c) ...	32 9	133	24	6	In the Great Bight, rocky, highest part 53 ft.
Sir Joseph Banks Group	...	...	...	...	Comprises Spilsby, Reevesby, Stickney, Roxby, Partney, Winceby, Tumby, Hareby, Milne, Langton, Kirkby, Sibsey, Lusby, Boucaut, Duffield, Blyth, English, Marum, and Dangerous Reef, all in Spencer's Gulf.
Smooth (c) ...	32 29	133 21	21	30	One of St. Francis' Group, steep, round, and smooth, 115 ft. high.
Smith (c) ...	34 58	136 2	2	90	Near Port Lincoln, highest part 73 ft., slightly undulating with coarse herbage.
Spilsby (l) ...	34 39	136 21	17	1,050	In Sir Joseph Banks' group, low cliffs, sandy beaches, fresh water, wooded, 163 ft. highest.
St. Peters (l) ...	32 17	133 36	3	8,200	In Nuyt's Archipelago, part hilly, part sand bank, granite rock, fresh water, 144 ft. highest.
St. Francis Islands	...	...	...	...	S.W. Group of Nuyt's Archipelago, comprising St. Francis, Masillon, Fenelon, Egg, Dog, West No. 1, Harts, Smooth and Seal Islands.
St. Francis (l) ...	32 30	133 20	22	2,000	Largest of St. Francis' Group, in Nuyt's Archipelago, steep cliffs, highest part 264 ft.
Stickney (l) ...	34 40	136 17	15	200	In Sir Joseph Banks' Group, 100 ft. high, slightly undulating, with coarse herbage.
Tauwicheerie (c) ...	35 34	139	1	356	Near mouth of River Murray, swampy.
Taylor's (l) ...	34 52	136 1	2	600	Near Port Lincoln, fair pasture, rocky outline, highest part 227 feet.
Thistle (l) ...	35	136 10	6	9,700	At entrance to Spencer's Gulf, white and brown cliffs, fair pasture, highest part 772 feet.
Topgallant (c) ...	33 43	134 38	15	50	Small high islet, and 3 rocks in Investigator's Group, cliff 250 ft., rounded summit 330 ft.
Torrens (c) ...	34 47	138 32	3	1,900	In N. arm of Port Adelaide River, Quarantine Station, parts sandy and swampy, fair pasture
Troubridge (c) ...	35 7	137 50	4	5	In Gulf St. Vincent, Low Island, 15 ft. high, shoal and reef, lighthouse.
Tumby (l) ...	34 24	136 9	1	75	In Sir Joseph Banks' Group, cliffs 37 ft. high.
Waldegrave (l) ...	33 36	134 49	2	800	Two islands in Investigator's Group, steep cliff, flat top, grassy, 120 ft. high.
Ward Isles (c) ...	33 45	134 19	33	50	Two small islets in Investigator's Group, cliff, flat top, 162 ft. high.
Wauralte or Wardang (l) ...	34 30	137 22	3	5,000	In Spencer's Gulf, near Port Victoria, bold outline, sandy beaches, cliffs, 107 ft. high, pasture
West No. 1 (c) ...	32 30	133 19	22	150	In St. Francis' Group, in Nuyt's Archipelago, narrow bare island, highest part 25 ft.
" 2 " ...	35 36	138 36	1	25	Near Port Elliot, stony islet, scant herbage.
Wedge (f) ...	35 9	136 23	24	2,340	One of Gambier Islands, 3 sides cliffs, highest part S.E. end, 662 ft., good pasture.
Whidbey Isles	...	...	...	...	S.W. of Eyre's Peninsula, consisting of Perforated, Four Hummocks, Price, etc.
Williams (c) ...	35 1	135 59	2	350	S. of Cape Catastrophe, Eyre's Peninsula, rugged, nearly flat.
Winceby (l) ...	34 23	136 17	10	100	In Sir Joseph Banks' Group, slightly undulating with coarse herbage.
Wright's (c) ...	35 35	138 37	3	5	At Encounter Bay, stony islet, scant herbage.

(c) Crown Lands. (f) Freshhold Lands. (l) Leased Lands.

**6. Northern Territory of Australia.**—(i.) *Introductory.* The accompanying information regarding the islands off the coast of the Northern Territory has been compiled from particulars supplied by the Secretary to the Department of External Affairs. A systematic survey of the whole of the islands has not yet been carried out, hence the number of lacunæ in the table.

(ii.) *The Goulburn and Other Islands.* In 1910, Mr. Nicholas Holtze, curator of the Botanic Gardens at Darwin, was instructed by the Government Resident of the Northern Territory to inspect the North and South Goulburn Islands, and as many other islands in the vicinity as time would permit. The notes herewith have been taken from Mr. Holtze's report.

*South Goulburn Islands.* Area 30 square miles. A fine sheet of fresh water was discovered in the north-western portion of the island. Separated from the sea by a sandy beach about 88 yards wide it follows the coast for  $1\frac{1}{4}$  miles, and then turns at right angles into a paper bark swamp carrying water for another half-mile. This expanse is about four feet deep, and varies in width from 120 to 140 yards. The surrounding country is of a light sandy nature, but is eminently suitable for india rubber, sisal hemp, cocoanuts, peanuts, or cotton. Indeed, cotton of good quality of the sea island type was discovered growing wild. There are between 4000 and 5000 acres of this class of country. Other portions of the island would be very suitable for Para rubber and cocoanuts, while there is some fair pastoral country. Large quantities of chicken pearl-shell were noticed lying about the different natives' camps. The shell had been gathered for food from the inshore reefs, and its profusion would seem to indicate good pearling grounds in the deeper waters.

*North Goulburn Island.* Area 14 square miles. This island contains a large paper bark swamp surrounded with good loamy soil suitable for Para rubber, cocoanuts, or upland rice. Much of the remaining area could be used for growing sisal hemp, or for pastoral purposes. Fresh water can be obtained by sinking shallow wells.

*Valentia Island.* The higher ground on this island is composed of stony ironstone soil heavily timbered, chiefly with *Eucalyptus tetradonta*, and suitable for the cultivation of sisal hemp. The lower portions consist of light sandy soil well adapted for the growth of cocoanuts and sisal. Depressions along the coast contain well-grown trees of paper bark (*Melaleuca leucadendron*) and evidence the presence of water.

*Templer's Island.* Portions of this island could be utilised for the growth of sisal hemp and cocoanuts. Water could be obtained by shallow sinking.

*Darch Island* is about 3 miles long, with a width of  $1\frac{1}{2}$  miles. There is some good timber, principally woolly-butt (*Eucalyptus miniata*), on the north-eastern point. The lower levels carry a heavy growth of grass. About 1000 acres would be suitable for upland rice, Ceará rubber, cocoanuts, and cotton, and the remainder of the island could be utilised for sisal hemp.

*Croker Island.* Area 126 square miles. Mr. Holtze reports that this island contains a large area of land very suitable for agricultural purposes. Surface water is plentiful. Numerous tracks of pigs, the progeny of those turned out years ago, were constantly met with. The southern point of a large bay on the north-west is well timbered with different species of eucalypts, and the soil appears fitted for the growth of upland rice, Ceará rubber, tobacco, cocoanuts, cotton, and sisal hemp. Inland, the soil is of a lighter texture, but well timbered and suitable for the growth of several tropical products. A large portion of the island consists of low, swampy country, which, when drained, would undoubtedly prove very fertile.

*Melville Island.* Area 2400 square miles. Here the first landing was effected at an unnamed point about 10 miles N.E. of Cape Keith. A jungle of large extent borders the long sandy beach, and the soil, though light in texture, would grow Ceará rubber, cocoanuts, cotton, or sisal hemp. A second landing was made at Cape Keith. The country in the vicinity consists of open forest, with light loamy soil of good character, well suited for the growth of tropical products. At Cape Gambier, where a third landing was made, the soil was found to be a light sandy loam, suitable for cocoanuts and sisal. Water can be obtained by shallow sinking in addition to that furnished by more or less permanent creeks. The buffalo was introduced on the island some years ago and there are now fairly large herds roaming in a wild state.

## ISLANDS OFF THE COAST OF THE NORTHERN TERRITORY OF AUSTRALIA.

Name of Island.	Area. Acres.	Nearest Point to Main- land.	Locality.
		Miles.	
Alger ... ..	—	4	N.E. of Point Napier
Astel ... ..	—	4	One of English Co. Is., N.E. of Buckingham Bay
Bathurst ... ..	503,040	39	Adjoining Melville Is.
Barron ... ..	—	1	Near mouth of South Alligator River
Burford ... ..	—	3	Dundas Strait
Banyan ... ..	—	3	Castlereagh Bay, mouth of Goyder River
Bromby Isles ... ..	—	5	N.E. of Cape Wilberforce
Bickerton ... ..	—	4	Near Blue Mud Bay
Bustard ... ..	—	19	Near Groote Eylandt
Beatrice ... ..	—	3	Mouth of Limmen Bight River
Buchanan Islets ... ..	—	—	Near S. entrance of Apsley's Strait
Bosanquet ... ..	—	4½	One of English Co. Is., N.E. of Buckingham Bay
Clump ... ..	—	3	Near entrance to Fitzmaurice and Victoria Rivers
Croker (L) ... ..	80,640	2	Bowen Strait
Cowlard ... ..	—	5½	Mount Norris Bay
Copeland ... ..	—	1½	" "
Crocodile ... ..	—	—	Castlereagh Bay
Connexion ... ..	—	20	Near Groote Eylandt, Gulf of Carpentaria
Chasm ... ..	—	27	" "
Cunningham Isles ... ..	—	16	N.E. of Point Napier
Cotton ... ..	—	2	" Buckingham Bay
Craggy Isles ... ..	—	11	Sir Edward Pellew Group. Nr. mouth of McArthur River, Gulf of Carpentaria
Centre ... ..	—	6	Sir Edward Pellew Group. Nr. mouth of McArthur River, Gulf of Carpentaria
Drysdale ... ..	—	11	Brown Strait
Driftwood ... ..	—	4	Entrance to Victoria River
Darch ... ..	—	11	East of Croker Is.
Entrance ... ..	—	—	Mouth of Victoria River
Elcho ... ..	—	4	Cadell Strait
Edward ... ..	—	1½	Near Limmen Bight River
Endalgout ... ..	—	—	Sir George Hope Is., Van Diemen Gulf
Field ... ..	—	2½	Near mouth of Alligator River
Grose (L) ... ..	—	4	" Bynoe Harbour
Grant ... ..	—	11	East of Croker Is.
Goulburn Nth. ... ..	8,960	10	Macquarie Strait
" Sth. (L) ... ..	19,200	2	" "
Groote Eylandt ... ..	608,000	25	Gulf of Carpentaria
Greenhill ... ..	—	2	Sir George Hope Is., Van Diemen Gulf
Haulround ... ..	—	5	Near mouth of Liverpool River, Boucaut Bay
Howard ... ..	—	4	Castlereagh Bay
Indian ... ..	—	4	Bynoe Harbour
Inglis ... ..	—	2	English Co. Is., N.E. of Buckingham Bay
Karslake ... ..	—	1	N. of Melville Is., between Shark and Snake Bays
Lawson ... ..	—	18	East of Croker Is.
Melville (L) ... ..	1,536,000	16	North of Port Darwin
Mallison ... ..	—	1	Arnhem Bay
Melville ... ..	—	3	Melville "
Morgan ... ..	—	7	Blue Mud "
Maria (L) ... ..	8,320	10	North of Limmen Bight River, Gulf of Carpentaria
Mogogout ... ..	—	1½	Sir George Hope Is., Van Diemen Gulf
Mayday ... ..	—	8	" "
McCleure ... ..	—	18	East of Croker Is.
North Point ... ..	—	30	North of Groote Eylandt, Gulf of Carpentaria
North East Isles ... ..	—	40	" "
New Year ... ..	—	26	North-east of Croker Is.
Nicols ... ..	—	11	Blue Mud Bay
North ... ..	—	17	Sir Edward Pellew Group, Gulf of Carpentaria
Oxley ... ..	—	24	East of Croker Is.
Perons Islands (L) ... ..	8,320	—	Mouth of Daly River
Pobassoo ... ..	—	2	English Co. Is., N.E. of Buckingham Bay
Quoin ... ..	—	1½	Entrance to Victoria River. Flooded at high tide
Quail (L) ... ..	—	8	Near Bynoe Harbour
Round Hill ... ..	—	1	" Blue Mud Bay
South West ... ..	—	3	Sir Edward Pellew Group. Nr. mouth McArthur R.
Sims ... ..	—	2	West of South Goulburn Is.
Templer ... ..	—	9	Mount Norris Bay
Truant ... ..	—	20	North-east of Cape Wilberforce
Vanderlin ... ..	64,000	9	Sir Edward Pellew Group. Gulf of Carpentaria
Valentia ... ..	—	1½	Mount Norris Bay
Woodah ... ..	—	4	Blue Mud Bay
Winchelsea ... ..	—	25	North of Groote Eylandt
Wessel Islands ... ..	—	22	North-east of Point Napier
West ... ..	—	5	Sir Edward Pellew Group, Gulf of Carpentaria
Wigram ... ..	—	5	English Co. Is., north of Cape Wilberforce
Sir Edward Pellew Group ... ..	—	—	Gulf of Carpentaria
Sir George Hope Islands ... ..	—	—	Van Diemen Gulf
English Company Islands ... ..	—	—	North-east of Buckingham Bay
Vernon (S), N.W., S.W. & E. ... ..	—	—	Clarence Strait, between mainland and Melville Is.

(L) Leased

7. **Western Australia.**—(i.) *Introductory.* The information given herewith regarding the islands off the coast of Western Australia has been prepared from returns furnished by the Department of Lands and Survey of that State, and from notes dealing principally with geology and physiography furnished by Mr. H. P. Woodward, Assistant Government Geologist.

(ii.) *General.* In view of the fact that a complete survey has not yet been made, it is impossible to give a detailed description of the whole of the islands. They have therefore been divided into groups commencing from the north, and the salient features of each group are described below.

(iii.) *The Various Groups.* (a) In the first group are included the islands off the coast of the Kimberley division, between Cape Londonderry on the east to Collier Bay on the west. These islands consist of severed portions of the mainland tableland, and are composed of horizontally bedded shales and quartzites, presumably of Lower Carboniferous age. They rise abruptly from the sea to a height of 100 feet or more, and in many cases it is difficult, if not impossible, to effect a landing on them. Some of them are of considerable extent, as the list shews, but so far they have not been put to any practical use, while they do not promise to be of any value in the future except for pastoral purposes.

(b) *The Buccaneer Archipelago.* This group consists of a number of rough islands composed of crystalline rocks. Little is known about them, and with the exception of the magnificent iron lodes on Koolan Island they have not yet yielded anything of commercial value.

(c) *Lacepede Islands.* This group of islands, surrounded by shoals, is, as the list shews, situated in lat. 17.47 and long. 122.10 at about 17 miles from the mainland. They were at one time leased to a company which proposed to work the phosphate deposits found thereon, but, owing to the limited extent of the deposits, the project was abandoned.

(d) *The Dampier Archipelago.* This group consists of a number of large rock-bound islands lying off the N.W. coast, between long. 115° and 116° and lat. 20° to 21°. They are composed of andesites and vesicular lavas belonging to the older volcanic series. Nothing of any commercial value has, up to the present, been found in this group, but some of the larger islands are used as sheep runs. Depuch, which is an island of similar type, lies about 50 miles to the eastward of the group.

(e) *Monte Bello Islands.* The largest island of this group is Barrow Island, upon which, some years ago, a turtle fishery and preserving works were in operation, but the works have been abandoned.

(f) *Shark's Bay Group.* In this group are found the three largest islands on the coast, viz., Dirk Hartog, Bernier, and Dorre. They are composed of tertiary limestones. The first is used as a sheep station, while on the two latter are situated the Aboriginal Lock Hospitals maintained by the Government.

(g) *Houtman's Abrolhos.* This is a group of low limestone islands between 40 and 50 miles from the coast. They contain extensive deposits of phosphorised limestone, which, in consequence of the large number of sea-fowl nesting there, are slightly impregnated with ammonia, and hence are largely used as fertilisers. Owing to their position the islands were a constant menace to the old Dutch navigators, who, after rounding the Cape, made for the coast in their vicinity.

(h) *Rottneest, Garden, Carnac Islands.* These are recent limestone islands near Fremantle. Rottneest is used as a native penal settlement, and until recently salt was manufactured there by evaporation of sea water. The three islands are now being converted into health resorts.

(i) *Islands near Albany.* In this group are a number of rugged granite islands of which Breaksea is one of the largest. The islands are unproductive, and the pasturage is too scanty to maintain sheep.

(j) *Recherche Group.* This group consists of a number of small, low, granite islands on the south coast between Esperance and Israelite Bay. They contain limited deposits of phosphate of lime. On Middle Island, about the largest of the group, salt works have been established at some brine lakes.

## ISLANDS OFF THE COAST OF WESTERN AUSTRALIA.

Name.	Geographical Position.		Approx. distance from Mainland	Area in acres (approximate.)	Remarks.
	Lat. S.	Long. E.			
La Crosse ...	14 45	128 18	5 $\frac{1}{2}$ Mls.	2,070	
Adolphus ...	15 06	128 09	14 $\frac{1}{2}$	18,000	
Reveley ...	14 22	127 45	1	720	
Barnes ...	15 10	128 10	1	360	East arm, Cambridge Gulf
Fairfax ...	15 10	128 07	1	700	West " " "
Rocky ...	14 02	127 30	2	90	
Lesueur ...	13 48	127 14	6	1,000	
Stewart ...	13 43	126 55	14	90	
Graham Moore ...	13 52	126 35	24	8,460	Total area, 3 islands
Mary ...	13 57	126 25	12	1,100	
Long ...	13 56	126 18	4	2,000	
Jar ...	14 09	126 15	1	800	
Eclipse ...	13 56	126 15	4	2,900	
Jones ...	13 46	126 21	15	2,000	
Red ...	13 53	126 07	43	90	
Troughton ...	13 45	126 08	11	400	
Hecla ...	13 57	126 00	1	100	
Osborne ...	14 17	126 00	1	3,500	
Fenelon ...	14 07	125 41	8	1,080	
Institute ...	14 09	125 45	10	650	
Bird ...	14 05	125 45	13	80	
Pascal ...	14 04	125 38	12	100	
Randal ...	14 09	125 34	6	50	
Condillac ...	14 06	125 33	10	150	
Corneille ...	14 10	125 42	5	680	
Descartes ...	14 09	125 39	34	800	
Cassini ...	13 57	125 33	23	1,450	
Kater ...	14 30	125 36	1	6,200	
Vallaston ...	14 32	125 30	1	6,200	
Parry ...	14 17	125 43	4	200	
Bandin ...	14 07	125 35	7	150	
Cleghorn ...	14 24	125 26	10	130	
Tancred ...	14 22	125 26	12	200	
Bishop ...	14 26	125 22	74	60	
Branch ...	14 27	125 20	7	50	
Hawick ...	14 21	125 24	124	50	
Capstan ...	14 33	125 14	4	270	
Walker ...	14 20	125 21	15	220	
Fruithoe ...	14 26	125 18	83	1,800	
East Montalivet ...	14 18	125 20	154	1,440	
West " "	14 19	125 16	174	450	
Biggee ...	14 32	125 14	1	50,000	
Championnet ...	14 30	125 06	11	50	
Maret ...	14 26	125 00	23	1,650	Total area, 2 islands
Berthier ...	14 30	125 00	19	1,080	
Albert ...	14 31	124 57	20	150	" 3 "
Queen ...	14 34	125 05	10	180	
Jussieu ...	14 37	125 00	12	400	
Lamarck ...	14 42	125 02	7	2,430	
Anderdon ...	14 56	125 11	12	800	
Bat ...	15 05	124 57	14	150	
Coronation ...	14 57	124 56	32	19,350	
Buffron ...	14 54	124 41	20	1,980	
Colbert ...	14 51	124 40	234	990	
Kerandren ...	14 56	124 37	204	800	Total area, 3 islands
De Freycinet ...	14 59	124 32	22	830	
Brown ...	15 07	124 30	164	100	
Rocky ...	15 06	124 32	15	150	" 3 "
Jackson ...	15 08	124 37	62	300	" 6 "
Prowse ...	14 01	123 37	275	200	
Entrance ...	15 14	124 39	5	1,440	
Hummock ...	15 16	124 36	34	180	
Greville ...	15 15	124 53	1	1,980	
St. Andrews ...	15 23	125 01	4	3,200	
St. Patricks ...	15 24	124 59	4	800	
Augustus ...	15 22	124 32	4	60,000	
Brecknock ...	15 27	124 35	4	610	
Green ...	15 29	124 34	24	180	
Sheep ...	15 29	124 35	12	120	
New ...	15 28	124 25	8	600	Total area, 6 islands
Byam Martin ...	15 21	124 25	15	11,880	
Heywood ...	15 21	124 21	15	4,000	
Vulcan ...	15 13	124 26	17	1,800	" 4 "
Slate ...	15 33	124 25	4	150	
Highcliffe ...	15 56	124 22	10	150	

## ISLANDS OFF THE COAST OF WESTERN AUSTRALIA—Continued.

Name.	Geographical Position.		Approx. distance from Mainland.	Area in acres (approximate.)	Remarks.
	Lat. S.	Long. E.			
Lizard	15 57	124 26	4	100	
Steep	16 04	124 28	4	200	
Champagny	15 17	124 17	18	2,200	Group, area of largest only
Expedition	15 31	123 47	40	12,000	
Adele	15 31	123 13	50	800	
Cockells	15 47	124 03	26	800	
Montgomery	15 56	124 09	19	6,930	
MacLeay	15 59	123 39	8	810	Group, area of largest only
Cockatoo	16 05	123 35	3	1,700	
Bathurst	16 01	123 31	7½	1,260	" " "
Cleft	16 02	123 20	17	120	
Caffarelli	16 02	123 18	19	1,100	
Hidden	16 14	123 28	4	800	
Tidderip	16 17	123 17	15	1,100	Total area, 4 islands
High	16 21	123 22	10	1,000	
Twin	16 16	123 04	6½	100	" 2 "
Roe	16 21	123 12	10	650	" 2 "
Sunday	16 23	123 11	10	3,600	Group, area of largest only
Tree	16 22	123 18	16	250	
Mermaid	16 25	123 20	10	800	
Long	16 33	123 21	6	3,300	
Fairway	16 34	123 18	10	100	
Helpman	16 43	123 37	2	180	
Valentine	17 05	123 19	2½	270	
Mary (North)	17 16	123 33	3	1,800	
Mary (South)	17 19	123 33	2½	1,800	
Lacedpede	17 47	122 10	17	1,800	Total area, 3 islands
Solitary	19 56	119 55	1	200	
Bedout	19 35	119 06	28	360	Lighthouse in centre of island 66 ft. above high water. Occulting light every 8 secs., period of light 2 seconds
Turtle	19 54	118 56	13	220	
East	20 33	117 53	1½	630	
Forestier	20 36	117 47	4	450	
Depuch	20 38	117 43	3	3,200	Four stone cairns (white) marking leads and anchorage
Picard	20 41	117 16	2½	50	
Jarman	20 39	117 14	2	100	Lighthouse in centre of isl'd, tower 97 ft. above high water, fixed white light, visible 15 miles
Bezout	20 33	117 11	3	150	
Delambre	20 25	117 05	11	800	
Haily	20 24	116 58	8	360	
Legendre	20 20	116 52	8	8,000	
Gidley	20 23	116 47	6	3,200	
Dolphin	20 25	116 51	3	1,000	
Angel	20 27	116 47	1½	3,000	
Malus	20 28	116 38	8	1,000	
Lewis	20 31	116 36	5	6,000	
Enderby	20 33	116 26	8½	13,400	
Goodwyn	20 33	116 26	13½	700	
Rosemary	20 26	116 30	12	4,300	
Dixon	20 37	117 04	1	2,750	
Mangrove	20 55	116 11	1	180	
Sholl	20 57	115 57	5	3,200	
Beagle	21 10	115 33	7	200	
Mary Anne	21 16	115 30	4½	200	
Barrow	20 47	115 26	34	50,000	
Double	20 49	115 24	33	450	
Lowendal	20 40	115 23	36	520	
Hermite	20 30	115 24	47½	10,000	
Flag	20 30	115 20	45	400	
South East	20 28	115 24	48	250	Monte Bello Islands
Tremouille	20 25	115 21	49	1,160	
North West	20 23	115 25	55	1,030	
Rosily	21 13	115 00	30	2,000	
Thevenord	21 27	115 00	14	1,170	
Direction	21 34	114 59	6½	50	
Table	21 37	114 45	9	100	
Long	21 37	114 42	8	1,450	
North Murion	21 36	114 22	22½	1,400	
South	21 38	114 17	23	2,300	
Fraser	22 42	113 33	2½	100	
Whitmore	24 51	113 38	1	200	
Babbage	24 52	113 39	1	1,250	Shipping jetty 4612 ft. long with 17 ft. of water at 4 w. at outer end, lighthouse near jetty 101 ft. above h. w., fixed white light visible 13 mls.

## ISLANDS OFF THE COAST OF WESTERN AUSTRALIA—Continued.

Name.	Geographical Position.		Approx. distance from Mainland.	Area in acres (approximate.)	Remarks.
	Lat. S.	Long. E.			
Faure ...	25 52	113 52	7 $\frac{1}{2}$	11,500	Cape Inscription, lighthouse 127 ft. above h.w., occulting light every 2 $\frac{1}{2}$ secs., period of light 5 secs., leading beacons for inner bar
Pelican ...	25 52	113 59	12 $\frac{1}{2}$	100	
Hutchison ...	26 08	114 12	3 $\frac{1}{2}$	360	
Koks ...	24 45	113 11	30	70	
Bernier ...	24 50	113 12	30	16,000	
Dorre ...	25 10	113 07	36	14,000	Total area, 5 islands
Dirk Hartog ...	25 50	113 00	1 $\frac{1}{2}$	153,000	
Slope ...	25 49	113 36	1	100	
Lefebre ...	25 57	113 44	3	100	
Kangaroo ...	26 03	113 43	4	60	
North Kangaroo	26 02	113 43	4	60	Total area, 2 islands
Head ...	26 06	113 43	4	100	
Unknown ...	26 03	113 32	4	100	
Charlie ...	26 08	113 47	4	50	
White ...	26 11	113 59	7 $\frac{1}{2}$	50	
Wilds ...	26 12	113 50	1	100	Total area, 2 islands
Mary Anne ...	26 15	113 54	3	150	
Baudin ...	26 18	113 52	1	100	
Salutation ...	26 20	113 59	4	540	
Three Bays ...	26 21	113 52	1	100	
Smiths ...	26 22	113 57	1 $\frac{1}{2}$	6)	Wallabi Group
East Wallabi ...	28 25	113 39	35	863	
West ...	28 27	113 37	37	1,510	
North Pigeon ...	28 26	113 39	36	14	
South ...	28 26	113 40	36 $\frac{1}{2}$	5	
Pelican ...	28 26	113 36	38	2	Easter Group
Goss' Monument	28 28	113 41	36	16	
Rat ...	28 42	113 44	47	171	
Second ...	28 42	113 44	47	2	
Third ...	28 42	113 44	47	21	
Beacon ...	28 43	113 44	47	4	Part Houtman Abrolhos Islands
Wooded ...	28 44	113 45	45	50	
Gun ...	28 53	113 52	40	46	
Eight ...	28 54	113 52	40	2 $\frac{1}{2}$	
Seven ...	28 54	113 52	40 $\frac{1}{2}$	1 $\frac{1}{2}$	
Six ...	28 55	113 52	40	2 $\frac{1}{2}$	Part Pelsart Group
Five ...	28 55	113 53	39 $\frac{1}{2}$	5	
Four ...	28 55	113 53	39 $\frac{1}{2}$	4 $\frac{1}{2}$	
Three ...	28 54	113 53	39 $\frac{1}{2}$	4	
Two ...	28 54	113 53	39	1	
One ...	28 54	113 53	39	5	Jetty for excursion steamers, depth at outer end 8 ft. 6 in., lighthouse in centre of island 264 ft. above h.w., flashlight every 17 seconds, visible 23 mls., lighthouse at Bathurst Point 98 ft. above h.w., fixed white light visible 15 miles, signal station
Nought ...	28 54	113 54	38	5	
Middle... ..	28 55	113 55	37	87	
Jubilee ...	28 53	113 55	36	1	
Ship Rock ...	28 55	113 55	36	1	
North ...	28 17	113 33	39	800	Two beacons leading across Parnelia Bank
Beagle ...	29 49	113 51	5	50	
Fisherman ...	30 07	113 56	2	100	
Cervantes ...	30 30	114 01	4	50	
Green ...	30 42	114 05	1	50	
Wedge ...	30 49	114 09	4	50	Two beacons leading across Parnelia Bank
Lancelin ...	30 59	114 16	4	100	
Edward ...	31 01	114 16	4	100	
Favourite ...	30 18	114 58	2 $\frac{1}{2}$	30	
Long ...	30 19	114 58	1	50	
Escape ...	30 20	114 58	2	30	Two beacons leading across Parnelia Bank
Little ...	31 48	115 40	1	30	
Triggs ...	31 52	115 41	4	20	
Rottneet ...	32 00	115 30	12	5,700	
Mewstone ...	32 08	115 39	5 $\frac{1}{2}$	15	
Carnac ...	32 09	115 39	5 $\frac{1}{2}$	260	Two beacons leading across Parnelia Bank
Garden ...	32 12	115 39	6	2,338	
Bird ...	32 14	115 40	4	20	
Seal ...	32 14	115 40	4	20	
Penguin ...	32 15	115 40	4	50	
Hamelin ...	34 13	115 01	4	40	Two beacons leading across Parnelia Bank
Seal ...	34 22	115 09	1	10	
St. Alouarn ...	34 24	115 12	3 $\frac{1}{2}$	25	



## ISLANDS OFF THE COAST OF WESTERN AUSTRALIA—Continued.

Name.	Geographical Position.		Approx. distance from Mainland.	Area in acres (approximate.)	Remarks.
	Lat. S.	Long. E.			
Flinders ...	34 24	115 12	4½	20	
Flat ...	34 51	116 00	4½	20	
Sandy ...	34 52	116 03	2	50	
Chatham ...	35 02	116 31	1	250	
Saddle ...	35 04	116 44	½	50	
Goose ...	35 05	116 44	1½	6	
Stanley ...	35 05	117 10	1	50	
Richards ...	35 05	117 39	2 ch	6	
Migo ...	35 05	117 39	2 ch	10	
Seagull ...	35 05	117 42	2	15	
Shelter ...	35 03	117 43	2 ch	25	
Stony ...	35 06	117 48	2½	10	
Green ...	35 07	117 52	1	20	Total area, 2 islands
Eclipse ...	35 11	117 54	4	250	
Seal ...	35 04	117 58	1½	10	
Mistaken ...	35 04	117 57	4	44	
Breaksea ...	35 04	118 03	3	249	Lighthouse 390 ft. above h.w., fixed white light visible 24 miles, Lloyd's signal station
Michaelmas ...	35 03	118 02	1½	204	
Geak ...	35 03	117 55	8 ch	6	
Inner ...	35 00	118 10	½	25	
Coffin ...	35 00	118 13	½	76	
Bald ...	34 55	118 28	2	2,000	
Whale ...	34 35	118 47	1½	10	
Doubtful ...	34 22	119 45	1	250	
Glasse ...	34 25	119 25	1	6	
Red ...	33 52	121 20	4	150	
Capps ...	33 59	121 41	7½	100	
Boxer ...	34 00	121 41	8	260	
Hector ...	34 00	121 41	7	10	West Group
Figure of Eight ...	34 02	121 36	10	700	
Canning ...	33 55	121 46	1	40	
Observatory ...	33 55	121 47	1	250	
Charley ...	33 55	121 53	3	250	
Button ...	33 53	121 54	2	20	
Rabbit ...	33 54	121 54	3	40	
Gull ...	33 55	121 55	3½	170	
Black ...	33 54	122 00	6	200	
Magistrate ...	33 55	121 59	6½	20	
Woody ...	33 57	122 00	5½	520	
Thomas ...	33 58	121 59	6½	220	
Gunton ...	33 59	122 00	6	220	
Sandy Hook ...	34 02	122 00	6	590	
Hendy ...	34 03	121 53	12½	30	
Long ...	34 03	121 58	9	340	
Remark ...	34 04	121 59	8	250	
Goose ...	34 04	122 00	7	190	
Corbett ...	34 08	122 00	10	230	
Wilson ...	34 08	121 59	10	200	
Davy ...	34 09	121 56	13	60	
Howe ...	34 09	121 01	11	170	
Hood ...	34 10	121 03	10	190	
Round ...	34 12	122 06	13	120	
Lion ...	33 52	122 01	2	40	
Cliff ...	34 01	122 05	1	30	
Cloud ...	34 03	122 05	2½	40	
Pasco ...	34 04	122 06	3½	80	
Hastings ...	34 05	122 07	6	60	
Ram ...	34 02	122 09	2	350	
Hope ...	34 06	122 10	5	85	
Mondrain ...	34 09	122 15	10	2,930	
Station ...	33 57	122 33	2	450	
Mart ...	34 01	122 35	4	1,100	Total area 6 islands
High ...	33 55	122 35	½	30	
Draper ...	34 13	122 00	19	450	
Goose ...	34 05	123 12	4	60	
Middle ...	34 07	123 12	6	3,000	
Douglas ...	34 09	123 11	9½	80	Total area, 2 islands
Bellringer ...	33 54	123 40	½	60	.. 2 ..

NOTE.—The whole of these islands are Crown Lands with the exception of the greater portion of Garden Island. Houtman Abrolhos, West Island of Lacepede Group, and La Crosse Islands are, however, at present under lease for the collection of guano.

8. *Tasmania*.—(i.) *Introductory*. The information regarding the islands of Tasmania in the tabular statement herewith is furnished on the authority of the State Crown Lands Office. Additional particulars concerning the more important islands have been extracted from the Crown Lands Guide and embodied in the paragraphs below.

(ii.) *The Principal Islands*. (a) *Furneaux Group*. This group, the largest islands in which are Flinders, containing about 513,000 acres, Cape Barren 110,000 acres, and Clarke Island 20,000 acres, lies in Bass Strait off the north-eastern corner of the mainland from which it is separated by Banks Strait, the latter being about 15 miles across in its narrowest part. Situated almost in a direct line between Cape Portland and Wilson's Promontory it forms one of the remaining links in the mountain system, which, according to some geologists, at one time connected Tasmania with the Continent of Australia. The rock formation of the group is almost exclusively granitic and tertiary, with, in places, metamorphic schists and sandstones. Tin has been found in small quantities on each of the islands in the group. Clarke Island is used for pastoral purposes, for which it is well adapted. As the list shews, a large proportion of Flinders has been taken up by selectors, and there are some small patches of good soil still available. Cape Barren Island is broken and rugged, and the soil is of poor quality. Some 4000 acres in the western end have been set apart as a reserve for the use of half-caste inhabitants. Some of the smaller islands such as Great Dog, Green, Preservation, and Kangaroo are very fertile. The sooty petrel, or mutton bird, resorts in great numbers to these islands, and their capture forms a profitable industry to the islanders. During the month of March the young birds are taken at night in hundreds from their rookeries. Large quantities of oil are obtained from the birds, which are then pickled for the outside market. Wild ducks are plentiful on the islands, and swans and Cape Barren geese are also found.

(b) *King Island*. This island is situated in Bass Strait, midway between the northern extremity of the mainland and Victoria. From north to south it is about 30 miles long, with an average width of 10 miles, and contains about 272,000 acres. The surface is undulating with a few hills here and there, of which the highest, known as Mount Stanley, is situated towards the southern end, and reaches an altitude of 700 feet.

The west coast of the island has so far proved the most attractive to settlers, and consists of open country with patches of ti-tree and comparatively young timber of the *E. globulus* variety. There is, however, evidence that large trees were plentiful at an earlier period, and that they have been destroyed by bush fires. On the sandy rises near the coast-line, mangrove, boobyalla, and ti-tree form the characteristic vegetation. Inland the flat open country is clothed with a thick growth of needle-rush, with tussocks of white native grass, and patches of low ti-tree scrub and bracken fern, and is moderately watered. There is some excellent land at the southern end of the island in the vicinity of Surprise Bay. Occasional outcrops of limestone are met with in this district. From Surprise Bay to Fitzmaurice Bay the unselected land is of poor quality, and is covered with stunted bracken, heath and ti-tree. At Fitzmaurice Bay there is some fine dairying country, and land of equal class extends almost along to the Ettrick River and Currie Harbour. Eight miles northward from Currie Harbour is found the settlement known as Porky Lagoon, where there is some fine well-watered country. Near Yellow Rock is the fine estate called Yambacoona, which contains about 7000 acres, including a fair amount under cultivation. From the south-east end of the island there is a fairly large extent of forest country extending northward beyond the Fraser River. The timber consists of blue and swamp gum, with some patches of blackwood. From sand and limestone the country changes along the east coast to granite formation for some miles.

Generally speaking the soil on the island is of a light, sandy nature, but it has been proved to form excellent pasturage land, while potatoes, turnips, mangolds, and all kinds of vegetables thrive to perfection.

(c) *Maria Island*. This island, so named by Tasman in 1642, is a prominent feature of the eastern coast, with which its principal place of communication is Triabunna,

distant 9 miles by boat. Along its north-eastern shore the island is rugged and precipitous, reaching its highest point in Mount Maria, 2329 feet in altitude. In the early days, Maria Island was a penal settlement, and the best land is found in the vicinity of the site of that settlement. Although the soil is suitable for cultivation, the great bulk of the available area is used for pastoral purposes.

The peaks of Mount Maria are composed of grey granite, while in the north-east corner of the island there are immense masses of fossiliferous limestone and on the west coast diabasic greenstone or trap, and sandstone. Tin, gold, and silver have been discovered in small quantities.

(d) *Bruni Island* (North and South) is separated from the mainland by D'Entrecasteaux Channel, and extends northerly from Bruni Head, off Southport, to the estuary of the Derwent, which is distant 13 miles from Hobart. The island is of very irregular shape, the two portions being joined by a narrow neck or isthmus at Adventure Bay. Of the total area, 90,000 acres, there still remains about 40,000 acres unalienated. The island possesses a very agreeable climate, and the soil has been proved to be very suitable for fruit-growing. Anthracite coal has been found on both divisions, but so far has not been turned to profitable account. Excellent fishing may be obtained at various spots. Beautiful land and seascapes are afforded at several points, while at Adventure Bay, with its sandy beach extending for several miles, the conchologist may reap a rich harvest.

(e) *Schouten Island*. This island lies to the south of Freycinet Peninsula, off Little Swanport. Its 8500 acres of more or less stony soil, while unsuitable for cultivation, form nevertheless excellent pasturage for sheep.

(f) *The Macquarie Group*. This group of islands, discovered in 1811 by seal-fishers from New South Wales, is situated in the South Pacific Ocean in lat. 54° 35' S., long. 159° east, and is distant about 600 miles in a south-westerly direction from New Zealand. Included in the group are Macquarie Island, 18 miles long by 5 miles broad; Bishop and Clerk, 30 miles to the south; and Judge and Clerk, 7 miles to the north of the main island. The surface is low-lying and destitute of timber. For many years the group was worked as a birding and sealing ground under the authority of the New Zealand Government in the belief that the islands came within the Dominion jurisdiction, but in recent years the licenses have been granted by Tasmania.

## ISLANDS OFF THE COAST OF TASMANIA.

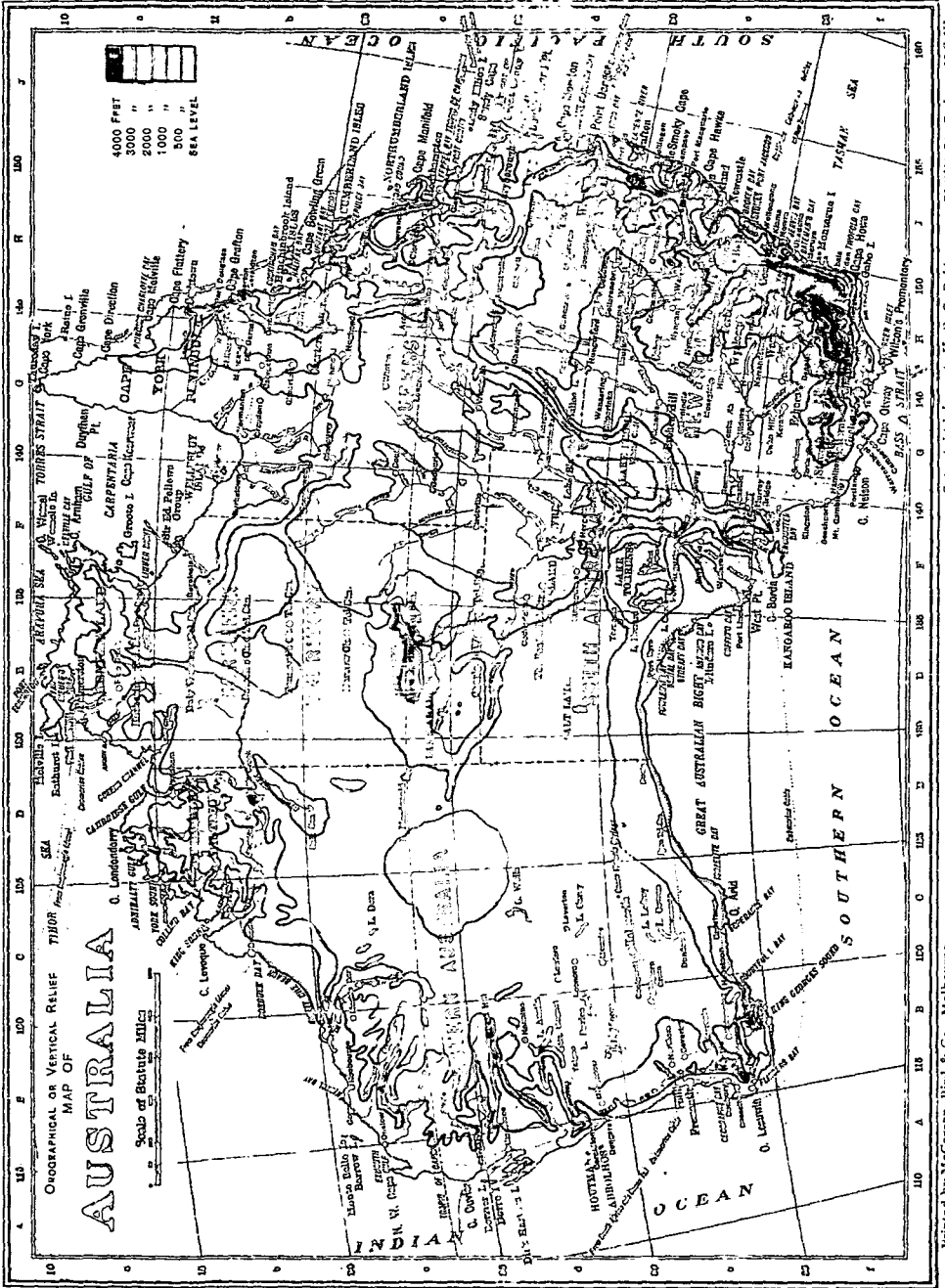
Name of Island.	Geographical position or distance from mainland.	Area.	Area of alienated Land, June, 1911.	Area of Crown Land, June, 1911.	Remarks.
	Miles	Acres.	Acres.	Acres.	
North Western Group—					
King ... ..	56	272,000	262,000	10,000	Two lighthouses (Cape Wickham & Currie), wharfage accommodation at Currie Har.
Robin ... ..	3	24,500	24,500	—	
Three Hummock ...	17	23,000	—	23,000	
West Hunter or Barren ...	3	21,000	—	21,000	
Walker ... ..	9	1,720	1,720	—	
Other islands in this group are:—					
Albatross ... ..	—	—	—	640	Reserved as a sanctuary for birds
Petrel ... ..	—	—	—	150	
Stack ... ..	—	—	—	75	
Penguin ... ..	—	—	—	100	
Bird ... ..	—	—	—	100	
Steep ... ..	—	—	—	75	Reserved for Mutton bird hunting
Trefoil ... ..	—	255	255	—	
Harbour ... ..	—	—	—	100	
Murkay ... ..	—	—	—	50	
Perkins ... ..	—	—	—	2,600	
Kangaroo ... ..	—	—	—	400	

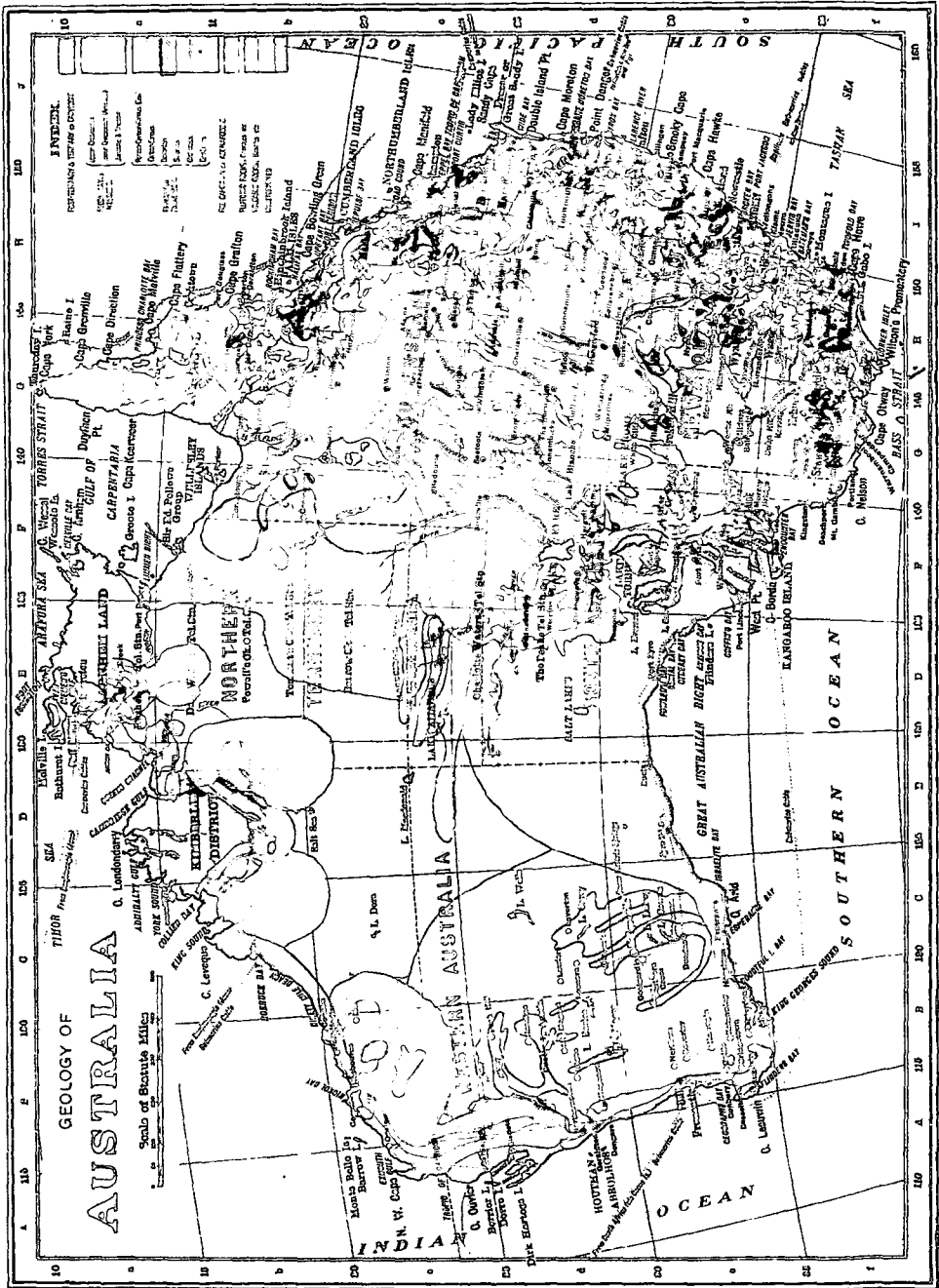
## ISLANDS OFF THE COAST OF TASMANIA—Continued.

Name of Island.	Geographical position or distance from mainland.	Area.	Area of Alienated Land, June, 1911.	Area of Crown Land, June, 1911.	Remarks.
	Miles	Acres.	Acres.	Acres.	
Waterhouse ...	2	420	320	100	
Ninth ...	7	75	40	35	
Furneaux Group—					
Flinders ...	34	513,000	400,000	113,000	Wharfage accommodation at Settlement Point, White Mark and Ferguson's Jetty
Cape Barren ...	21	110,000	112	109,888	
Clarke ...	15	20,000	—	20,000	
North Sister ...	77	1,000	—	1,000	
South Sister ...	74	1,500	—	1,500	
Babel ...	60	1,200	100	1,100	Reserved for Mutton bird hunting
Cat ...	60	75	—	75	Reserved as a sanctuary for birds
Storehouse ...	60	38	—	38	
Vansittart ...	37	1,500	500	1,000	
Great Dog ...	38	820	—	820	
Little Dog ...	38	250	200	50	
Little Green ...	39	230	60	170	Reserved for Mutton bird hunting
Tin Kettle ...	32	424	—	424	
Gull ...	31	150	—	150	
Passage ...	24	600	—	600	
Penguin ...	23	500	—	500	Reserved for Mutton bird hunting
Rum ...	19	30	—	30	
Preservation ...	19	450	50	400	
Night ...	19	25	—	25	
Boxen ...	26	30	—	30	
Long ...	27	740	40	700	
Doughboy ...	29	75	—	75	
Woody ...	32	393	—	393	
Pelican ...	35	10	—	10	
Puncheon Head ...	35	40	40	—	
Badger ...	31	2,100	100	2,000	
Goose ...	31	241	—	241	Lighthouse
Mt. Chappell ...	33	600	100	500	
Kangaroo ...	40	340	40	300	
Green ...	39	250	250	—	
Isabella ...	43	10	—	10	
Chalky ...	45	90	—	90	
Prime Seal ...	47	2,200	—	2,200	
Low ...	44	50	—	50	
Rabbitt ...	50	60	—	60	
North Pascoe ...	59	100	—	100	
Middle Pascoe ...	58	150	—	150	
South Pascoe ...	57	150	—	150	
Sentinel ...	64	25	—	25	
Craggy ...	75	10	—	10	
Hogan Group ...	—	—	—	—	Long. 146° 59' E., lat. 39° 13' S.
Kent's Group ...	—	—	—	—	Ab't 32 m. N.W. of Flinders I. Lighthouse
Curtis ...	—	—	—	—	
Swan ...	2	600	—	600	Lighthouse
St. Helen's ...	1	120	—	120	
Schouten ...	$\frac{1}{2}$	8,500	—	8,500	
Maria ...	$\frac{1}{4}$	24,000	6,500	17,500	Two jetties—Settlement Pt. & Shoal Bay
Tasman ...	$\frac{1}{4}$	400	—	400	Lighthouse
Wedge ...	$\frac{1}{2}$	100	—	100	
Franklin ...	1	420	420	—	
Bruni ...	$1\frac{1}{2}$	90,000	52,000	38,000	Six jetties, viz., Denne's Pt., Barnes' Bay, Mills' Reef, Daniel's Bay, Taylor's Bay, and Adventure Bay. Lighthouse
Maatsuyker ...	3 & 8	—	—	—	Lighthouse
Macquarie ...	—	—	—	—	Long. 159° 40' E., lat. 54° 35' S.

## § 3. The Fauna of Australia.

An authoritative article describing in some detail the principal features of the Fauna of Australia was given in Year Books No. 1 (see pp. 103 to 109) and No. 2 (see pp. 111 to 117), while a synoptical statement appeared in No. 3 (see pp. 73 to 76). Considerations of space will, however, preclude the inclusion in this issue of more than a passing reference to the subject.





### § 4. The Flora of Australia.

In Year Books No. 1 (see pp. 109 to 114) and No. 2 (see pp. 117 to 122) a fairly complete though brief account was given of the Flora of Australia, and in Year Book No. 3 similar information in a greatly condensed form will be found on pp. 76 to 78. Space in this issue will not permit of more than a mere reference to preceding volumes.

### 5. Seismology in Australia.

A brief statement regarding the position of seismology and seismological record in Australia appears in Year Book No. 4, pp. 82 and 83.

*Barisal Guns.* Reference may be made here to an interesting pamphlet published by Dr. J. Burton Cleland, in which the author sums up the available information regarding the peculiar explosive or booming noises heard at times in Australia as well as in other parts of the world. As far as inland Australia, at all events, is concerned, it seems clear that the explosions are of earth origin, and are probably due to the sudden sundering of immense rock masses, either as a result of climatic influences, or through folding movements in the earth's crust.

### § 6. The Geology of Australia.

1. **General.**—Independent and authoritative sketches of the geology of each State were given in Year Books No. 1 (see pp. 73 to 103) and No. 2 (see pp. 78 to 111). Want of space has precluded the insertion of these sketches in the present issue of the Year Book, and it has not been considered possible to give anything like a sufficient account of the geology of Australia by presenting here a mere condensation of these sketches. Reference must, therefore, be made to either Year Book No. 1 or No. 2, *ut supra*.

2. **Geological Map of Australia.**—The map of the Geology of Australia on page 82, shews the geographical distribution of the more important geological systems and formations.

### § 7. Climate and Meteorology of Australia.<sup>1</sup>

1. **Introductory.**—In preceding Year Books some account was given of the history of Australian meteorology, including reference to the development of magnetic observations and the equipment for the determination of various climatological records. (See Year Book 3, pp. 79, 80). In Year Book No. 4, pp. 84 and 87, will be found a short sketch of the creation and organisation of the Commonwealth Bureau of Meteorology and a resumé of the subjects dealt with at the Meteorological Conference of 1907. Space will not permit of the inclusion of this matter in the present issue.

2. **Meteorological Publications.**—The following publications are issued daily from the Meteorological Bureau, viz.:—(i.) Weather charts. (ii.) Rainfall maps. (iii.) Bulletins, Victorian and Interstate, shewing pressure, temperature, wind, rain, cloud extent, and weather.

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<sup>1</sup> Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire, F.R.M.S.

The Bulletins of Climatology are as follows:—(a) No. 1.—A general discussion of the climate and meteorology of Australia, illustrated by one map and diagrams. (b) No. 2.—A discussion of the rainfall over Australia during the ten years (1897-1906) compared with the normal, illustrated by one map. No. 3.—Notes and statistics of the remarkable flood rains over south-eastern Australia during the winter of 1909, illustrated by five maps and diagrams. No. 4.—A discussion of the monthly and seasonal rainfall over Australia, illustrated by one map and diagram. No. 5.—An investigation into the possibility of forecasting the approximate winter rainfall for Northern Victoria, illustrated by two diagrams. No. 6.—The physiography of the proposed Federal Territory at Canberra, illustrated by a relief map and 21 plates. No. 7.—On the climate of the Yass-Canberra district, illustrated by one map. No. 8.—Physiography of Eastern Australia, with 28 text illustrations.

Commencing with January, 1910, the "Australian Monthly Weather Report," containing statistical records from representative selected stations, with rain maps and diagrams, etc., is being published. It is proposed to publish in an annual volume of meteorological statistics, complete rainfall and other climatological data.

**3. General Description of Australia.**—In the general description of Australia, page 45, it is pointed out that a considerable portion (0.530) of three States of the Australian Commonwealth is north of the tropic of Capricorn, that is to say, within the States of Queensland, the Northern Territory and Western Australia, no less than 1,149,320<sup>1</sup> square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of the Commonwealth within the temperate zone, however, is 1,825,261<sup>2</sup> square miles, thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.591). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range.

While on the coast the rainfall is often abundant and the atmosphere moist, in some portions of the interior the rainfall is very limited, and the atmosphere dry. The distribution of forest, as might be expected, and its climatic influence, is consequently very variable. In the interior there are on the one hand fine belts of trees, on the other there are large areas which are treeless, and where the air is hot and parched in summer. Again, on the coast, even as far south as latitude 35°, the vegetation is tropical in its luxuriansness and also somewhat so in character. Climatologically, therefore, Australia may be said to present a great variety of features. The various climatological characteristics will be referred to in detail.

**4. Meteorological Divisions.**—The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(a) Between divisions I. and II., the boundary between South and Western Australia, viz., the 129th meridian of east

1. In the article "Australia" in the *Encyclopædia Britannica*, Vol. XXX., p. 796, this area is given as 1,145,000 square miles.

2. Given as 1,801,700 square miles in the work above quoted, where, however, the statistics are said "to refer only to the continental States of the Federation, not to Tasmania."



longitude; (b) between divisions II. and III., starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia on the Darling River, New South Wales; (c) between divisions II. and IV., from Wilcannia along the Darling River to its junction with the Murray; (d) between divisions II. and V., from the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (e) between divisions III. and IV., starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (f) between divisions IV. and V., from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (g) division V. includes Tasmania.

The population included within these boundaries on the 3rd April, 1911, was approximately as follows:—

Division	I.	II.	III.	IV.	V.
Population	282,000	429,000	607,000	1,540,000	1,597,000

In these divisions the order in which the capitals occur is as follows:—(i.) Perth, (ii.) Adelaide, (iii.) Brisbane, (iv.) Sydney, (v.) Melbourne, (vi.) Hobart, and for that reason the climatological and meteorological statistics will be set forth in the indicated order in this publication.

(i.) *Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented herein-after, are as follows:—

#### SPECIAL CLIMATOLOGICAL STATIONS.

Locality.	Height above Sea Level.	Latitude.		Longitude.		Locality.	Height above Sea Level.	Latitude.		Longitude.	
		S.	E.	S.	E.			S.	E.	S.	E.
Perth ...	197	31	57	115	51	Port Darwin ...	97	12	28	130	51
Adelaide ...	140	34	56	138	35	Daly Waters ...	700	16	16	133	23
Brisbane ...	137	27	28	153	2	Alice Springs ...	1926	23	38	133	37
Sydney ...	146	33	52	151	12	Dubbo ...	870	32	18	148	35
Melbourne ...	115	37	50	144	59	Laverton ...	1530	28	40	122	23
Hobart ...	160	42	53	147	20	Coolgardie ...	1402	30	57	121	10

5. *Temperatures.*—In respect of Australian temperatures generally it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa as far south as latitude 33°, while in Australia it reaches only as far south as latitude 30°, thus shewing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included in the comparison, for in the United States the 70° isotherm extends in several of the western States as far north as latitude 41°. In Europe the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or approximately double the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Port Darwin, for example, the difference in the means for the hottest and

coldest months is only  $8.6^{\circ}$ , and the extreme readings for the year, that is, the highest maximum in the hottest month and the lowest reading in the coldest month, shew a difference of under  $50^{\circ}$ .

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced way inland.

The detailed temperature results for the several capitals of the States of Australia are shewn in the Climatological Tables hereinafter. It will suffice here to briefly refer to special features.

(i.) *Perth*. Meteorological observations were taken in the Perth Botanical Gardens as far back as 1876, but since the conditions surrounding the instruments and the situation of the station relative to Perth cannot be regarded as quite satisfactory, the more exact climate history of Perth did not properly commence until 1897, when the present Observatory was established. During the period 1897 to 1910, the mean annual shade temperature of Perth was  $64^{\circ}$ , about a degree higher than that for Sydney and Adelaide, nearly  $6^{\circ}$  higher than that for Melbourne, and  $10^{\circ}$  above that for Hobart, but, on the other hand,  $5^{\circ}$  below that for Brisbane. The average temperature for the month of January is  $73.5^{\circ}$ , and for July  $54.9^{\circ}$ .

The extreme maximum shade record of  $107.9^{\circ}$  was registered in December, 1904, and the lowest minimum shade temperature was  $35.3^{\circ}$ , in August, 1908.

(ii.) *Adelaide*. In Adelaide the climate is drier and more sunny than in the other capitals, and, consequently, radiation is less hindered. The extremes of heat are consequently somewhat more marked, especially in the summer months. The mean shade temperature for January is  $74.2^{\circ}$ , and February  $74.0^{\circ}$ , and that of July  $51.5^{\circ}$ . Records of the temperature having reached  $100^{\circ}$  exist for each of the six summer months from October to March, and of having exceeded  $110^{\circ}$  exist for each of those months with the exception of March and October. The highest record of shade temperature in Adelaide is  $116.3^{\circ}$ , registered in January, 1858, and the lowest  $32.0^{\circ}$ , a range of  $84.3^{\circ}$ . The freezing point has only once been reached by the shade temperature thermometers, notwithstanding the fact that records have been kept for fifty-four years. Frosts have, however, occurred on the grass (four feet below the shade thermometers) at various times between the beginning of April and the end of November.

(iii.) *Brisbane*. In Brisbane the monthly mean shade temperature ranges from  $77.2^{\circ}$  in January to  $58.0^{\circ}$  in July, a difference of  $19.2^{\circ}$ . The extremes have varied from  $108.9^{\circ}$  in January to  $36.1^{\circ}$  in July, viz., through a range of  $72.8^{\circ}$ .

(iv.) *Sydney*. In Sydney the highest monthly mean is  $71.6^{\circ}$ , recorded in January, while the lowest, again in July, is  $52.3^{\circ}$ , giving a range of  $19.3^{\circ}$ .

The extremes of shade temperature recorded at Sydney over a period of half a century are  $108.5^{\circ}$  in January, 1896, and  $35.9^{\circ}$  in July, 1890, i.e., a range of  $72.6^{\circ}$ .

(v.) *Melbourne*. In Melbourne the January mean shade temperature averages  $67.5^{\circ}$ , and that of July  $48.5^{\circ}$ , the highest reading ever recorded being  $111.2^{\circ}$  in January, 1862, and the lowest  $27.0^{\circ}$  in July, 1869.

(vi.) *Hobart*. The mean temperature for the hottest month at Hobart is  $62.1^{\circ}$  in February, and that of the coldest  $45.8^{\circ}$ , in July, the highest reading ever recorded being  $105.2^{\circ}$  in December, 1897, and the lowest  $27.7^{\circ}$  in July, 1895, nearly a degree higher than the lowest experienced in Melbourne.

(vii.) *Hottest and Coldest Parts*. A comparison of the temperatures recorded at coast and inland stations shews that, in Australia as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds  $120^{\circ}$  in the shade, and during the dry winters the major

portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable, it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds  $100^{\circ}$  for days, and even weeks continuously. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria, namely, the region of the Australian Alps. Here the temperature seldom, if ever, reaches  $100^{\circ}$  even in the hottest of seasons.

In Tasmania also, although occasionally hot winds may cross the Straits and cause the temperature to rise to  $100^{\circ}$  in the low-lying parts, yet the island as a whole enjoys a most moderate and equable range of temperature throughout the year.

(viii.) *Monthly Maximum and Minimum Temperatures.* The mean monthly maximum and minimum temperatures can be best shewn by means of graphs, which exhibit the nature of the fluctuation of each for the entire year. In the diagram (on page 103) for nine representative places in Australia, the upper heavy curves shew the mean maximum, the lower heavy curves the mean minimum temperatures based upon daily observations. On the same diagram the thin curves shew the relative humidities (see next paragraph).

**6. Relative Humidity.**—Next after temperature the degree of humidity may be regarded as of great importance as an element of climate; and the characteristic differences of relative humidity between the various capitals of Australia call for special remark. For six representative places the variations of humidity are shewn on the graph on page 103, which gives results based upon daily observations of the dry and wet bulb thermometers. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for a continuous period of any length. For this season it has been thought expedient to refer to the record of humidity at first order stations only, where the results are thoroughly reliable. Throughout, the degree of humidity given will be what is known as *relative humidity*, that is, the percentage of aqueous vapour actually existing to the total possible if the atmosphere were saturated.

(i.) *Perth.* At Perth the mean annual humidity at 9 a.m. is 63; the greatest monthly mean is 83, and is in June, and the lowest 45, in January.

(ii.) *Adelaide.* At Adelaide the mean annual humidity at 9 a.m. is only 56; the mean monthly humidity has been as low as 33 in January and December, and as high as 87 in July.

(iii.) *Brisbane.* In Brisbane the mean annual humidity at 9 a.m. is 68; the lowest monthly mean recorded is 47, and is in September, and the highest 85 in the months of March and May.

(iv.) *Sydney.* In Sydney the mean annual humidity at 9 a.m. is 73; the greatest monthly average, which occurred in May, 1891, was 90, while the lowest monthly mean, 54, occurred in the month of November, 1910.

(v.) *Melbourne.* The mean annual humidity derived from the 9 a.m. 3 p.m. and 9 p.m. observations in Melbourne is 71; the greatest monthly average 88, in June and July, 1858, and the lowest 49, in December, 1908.

(vi.) *Hobart.* Hobart's mean annual humidity at 9 a.m. is 71, the highest monthly mean 92, in June, and the lowest 51, in February and December.

From the above results, it is seen that, in respect of relative humidity, Sydney has the first place, while Hobart, Melbourne, Brisbane, Perth, and Adelaide follow in the order stated, Adelaide being the driest. The graphs on page 103 shew the annual variations in humidity. It will be observed that the *relative* humidity is ordinarily but not invariably great when the temperature is low.

7. **Evaporation.**—The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure and movement. In Australia the question is of perhaps more than ordinary importance; since in its drier regions water has often to be conserved in "tanks"<sup>1</sup> and dams. The magnitude of the economic loss by evaporation will be appreciated from the following records, which have been obtained from either jacketed tanks sunk into the ground, or in the case of Laverton (W.A.) from a jacketed vessel (8 inches in diameter) exposed on the surface.

The average total evaporation at Sydney is 37.42 inches; at Melbourne, 38.30 inches; at Adelaide, 54.44 inches; and at Perth, 66.01 inches, these results being based respectively upon 10, 38, 41, and 12 years' observations. For Brisbane the evaporation for the year 1910 was 48.61 inches.

In the interior of New South Wales the annual evaporation is as high as 84 inches; in Central Australia at Alice Springs the average for 20 years is 97.10 inches; at Coolgardie, Western Australia, the mean for twelve years is 86.60 inches, and at Laverton, in the same State, the yearly amount derived from the last 5 years is 146.79 inches, or over 12 feet.

(i.) *Monthly Evaporation Curves.* The curves shewing the mean monthly evaporation in various parts of the Commonwealth will disclose how characteristically different are the amounts for the several months in different localities. The evaporation for characteristic places is shewn on diagram shewing also rainfalls (see page 104).

(ii.) *Loss by Evaporation.* In the interior of Australia the possible evaporation is often greater than the actual rainfall. Since, therefore, the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Similarly, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation: these matters are of more than ordinary concern in the drier districts of Australia.

8. **Rainfall.**—As even a casual reference to climatological maps, indicating the distribution of rainfall and prevailing direction of wind, would clearly shew, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth's surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east and westerly trade winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude. Hence we find that, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains, upon which the rain-laden winds blow, from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia from the summer south-east trade winds. Here the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly trade winds, which skirt the southern shores, are responsible for the very reliable, although generally light, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(i.) *Factors determining Distribution and Intensity of Rainfall.* The distribution and intensity of rainfall in the interior of the continent, and also to some extent in the areas already mentioned, are governed by the seasonal peculiarities of three distinct atmospheric control systems, the most important of which is, undoubtedly, the anticyclonic stream. This stream, which girdles the earth and embraces approximately the region between 15° and 40° south latitude, breaks up into vast elliptically-shaped bodies

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1. In Australia artificial storage ponds or reservoirs are called "tanks."

of circulating atmosphere, measuring frequently 3000 miles in their major and 2000 miles in their minor axes. In passing over Australia from west to east, these great bodies of circulating air cause moist-laden winds to sweep across the continent from the surrounding oceans. The front-circulation brings in winds from the Southern Ocean, and the rear-circulation those from the equatorial seas.

The rain-invoking agent second in order of importance because of its reliability is the well-known "V-shaped depression." The sphere of operation of this latter disturbance is ordinarily the southern half of the continent, although occasionally it may extend its influence to tropical latitudes. The western half of this type of disturbance, with a southerly wind circulation, is the portion from which rain is most frequently to be expected, but occasionally good falls of rain, attended with electrical manifestations, are liberated from the warm eastern portion.

The third agent associated with the production of rain is the tropical depression more popularly known as the "monsoonal depression." This disturbance may be in active evidence for a succession of seasons, and then be conspicuously absent for a number of years, thus raising the question whether, after all, it can be regarded as in any way a distinctive feature of Australian meteorology.

When these disturbances are actively operative in the production of rain, the effect on the country generally, and the economic results for the succeeding season, are very pronounced. The interior of the continent becomes transformed. The plains, which ordinarily have so profound an effect on the heat winds of the summer, are deluged with rain, and respond immediately with an astonishingly luxurious growth of grass and herbage. The air is both tempered in heat, and loses its dryness for considerable periods after their visitations.

The distribution of rain by monsoonal disturbances is, however, very capricious in comparison with that precipitated by the southern "depressions." During some seasons the whole of the northern half of the continent will benefit to a fairly uniform degree, at another time some special region will be favoured. A remarkable example of this peculiarity occurred in 1902, for when monsoonal rains were copiously falling over the major portion of Western Australia, the eastern half of the continent was suffering from severe drought conditions.

During other seasons, tongue-shaped regions extending southwards from the northern shores of the continent will be particularly favoured in regard to rain. These regions may extend to the interior of Western Australia, and simultaneously others may occur in the Central Territory, in Western Queensland, and in the interior of New South Wales.

It is thus obvious that different parts of the continent are mainly dependent upon forms of atmospheric disturbances for what may be called their fundamental rains, and since there is a seasonal tendency for a particular class of storms to predominate, it rarely happens that any year passes in which the rains are universally good. Again, the condition of drought can hardly affect the whole of the continent at the same time. Nevertheless a more than ordinarily fortunate condition in one part of the continent ordinarily implies drought conditions in another, or *vice-versâ*. Thus in New South Wales, monsoonal rains, so beneficial to its north-western districts, rarely extend during the same season to coastal areas, or to Southern Riverina. For this reason it may happen occasionally that sheep may with advantage be sent 500 or 600 miles from the coast for feed and water. Should the southern or antarctic low-pressure be the predominating influence, the country to the south of the Murrumbidgee River is benefiting at the expense of the remainder of the State. A good coastal season ordinarily depends upon an anticyclonic control; when such exists, the country west of the tablelands usually wants water.

A good season for Australia as a whole is dependent upon many circumstances. Not only must the main rain-giving storms be well represented, but other favourable conditions must also coexist. The general rate of translation of the atmosphere across the continent is a factor of the utmost importance. Another is the latitude the cyclones and

anti-cyclones are moving in, and, further, the daily or periodic surgings of high and low pressures to and from the equator are also factors of considerable moment.

(ii.) *Time of Rainfall.* Monsoonal rains affect the northern parts of the continent in the summer months, and may continue with diminishing energy for nearly six months of the year. As they penetrate into higher latitudes the period of action is delayed, but is not shortened, though the quantities of the fall materially lessen. Antarctic rains are experienced during the winter months of the year, the resultant quantities being reliable and consistently regular. The heaviest totals from this source are precipitated on the west coast of Tasmania. Thus at Mount Lyell the total for one year exceeded 140 inches, and even the average is 116.32 inches.

Anticyclonic rains occur at all times of the year, but more markedly from March to September. They benefit particularly the southern area of the continent, and are responsible for many of the heaviest rainfalls and floods on the coastal districts of New South Wales.

(iii.) *Wettest and Driest Regions.* The wettest known part of Australia is on the north-east coast of Queensland, where three stations situated on, or adjacent to, the Johnstone and Russell Rivers have an average annual rainfall of between 150 and 166 inches. The maximum and minimum falls there are:—Goondi, 241.53 and 76.24 inches, or a range of 165.29 inches; Geraldton, 211.24 and 69.87 inches, or a range of 141.37 inches; Harvey Creek, 238.45 and 80.47 inches, or a range of 157.98 inches.

On three occasions more than 200 inches have been recorded at Goondi, the last of these being in 1910 when 204.82 inches were registered. The record at this station covers a period of 18 years.

Harvey Creek in the shorter period of 14 years has twice exceeded 200 inches, the total for 1910 being 201.28 inches.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where it rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia have until recent years been regarded as the driest part of Australia, but authentic observations taken during the past decade at settled districts in the east of that State show that the annual average is from 10 to 12 inches.

(iv.) *Quantities and Distribution of Rainfall generally.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent, subject to capricious monsoonal rains, as the comparisons hereunder will shew. The general distribution is best seen from the map on page 107, shewing the areas subject to average annual rainfalls lying between certain limits. The areas enjoying varying quantities of rainfall determined from the latest available information are shewn in the following table:—

DISTRIBUTION OF AVERAGE RAINFALL.

Average Annual Rainfall.	N.S.W.	Victoria.	Queensland.	South Aust.	Northern Territory.	Western Aust.	Tasmania.	Commonwealth.
	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.
Under 10 inches	44,997	nil	126,390	317,600	138,190	417,896	nil	1,045,073
10—15 "	77,268	19,912	132,500	33,405	141,570	247,306	nil	651,961
15—20 "	57,639	12,626	118,650	14,190	62,920	150,110	nil	416,135
20—30 "	77,202	29,317	175,390	13,827	93,470	109,481	4,242	502,929
30—40 "	30,700	14,029	67,310	984	40,690	37,498	7,397	198,608
Over 40 "	22,566	12,000	50,260	64	46,780	13,629	14,576	159,875
Total area ...	310,372	87,884	670,500	380,070	523,620	975,920	26,215	2,974,581

NOTE.—Western Australia and Queensland are subject to alteration.

Referring first to the southern capitals, it may be noted that the average at Melbourne from 67 years' records is 26.13 inches; the maximum 44.25, and minimum 15.61; the range therefore is 28.64 inches. At Adelaide the average determined from 71 years' totals is 21.15, the maximum 30.87, the minimum 13.43 and the range therefore 17.44 inches. At Hobart 23.38 inches is the average annual rainfall, 40.67 is the highest total for one year, 13.43 is the lowest; thus 27.24 inches is the extreme range. The average for Perth is 33.54 inches, 46.73 being the maximum and 20.48 inches the minimum; the range is therefore 26.25 inches. These figures appear to constitute an exception to the general rule, but it should be mentioned as a possible explanation that records have there been taken only since 1876, whereas the records at the other cities date from 1840 or thereabouts.

Continuing the comparison of rainfall figures, Sydney's average annual total is 48.26 inches, its maximum 82.81 in 1860, and minimum 21.48 in 1849, thus the range is 61.33 inches. At Brisbane the disparities are greater still. There the average is 46.98 inches—a trifle lower than that of Sydney—the annual maximum was 88.26 inches in 1893, the minimum 16.17 inches in 1902, and the range therefore 72.09 inches.

In order to shew how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. Port Darwin, typical of the Northern Territory, shews that in that region nearly the whole of the rainfall occurs in the summer months, while little or nothing falls in the middle of the year. The figures of Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October in the former, and in November in the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with slight excesses in April and July; the averages during the last six months are fair and moderately uniform. In general it may be said that one-fourth of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 inches, the remaining three-fourths receiving generally from 10 to 15 inches.

(v.) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are best seen by referring to the graphs for a number of characteristic places. It will be recognised at once how large is the evaporation when water is fully exposed to the direct rays of the sun, and to wind, etc.

(vi.) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions.

## RAINFALL AT THE AUSTRALIAN CAPITALS, 1840 to 1910.

Year.	PERTH.			ADELAIDE.			BRISBANE.			SYDNEY.			MELBOURNE.			HOBART.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1840	...	...	...	24.23	99	...	29.32	...	...	58.52	150	...	22.57	...	...	...	...	...
1	...	...	...	17.96	93	...	49.31	...	...	76.31	142	...	30.18	...	...	13.95	...	...
2	...	...	...	20.32	122	...	28.81	...	...	48.82	137	...	31.16	...	...	23.60	...	...
3	...	...	...	17.19	104	...	51.67	...	...	62.78	168	...	21.54	...	...	13.43	...	...
4	...	...	...	16.88	136	...	63.20	...	...	70.67	157	...	30.74	...	...	26.25	...	...
5	...	...	...	18.83	125	...	39.09	...	...	62.03	132	...	23.93	...	...	16.68	...	...
6	...	...	...	26.89	114	...	31.41	...	...	43.83	139	...	30.53	...	...	21.96	...	...
7	...	...	...	27.61	109	...	...	...	41.83	42.80	142	...	30.18	...	...	14.46	...	...
8	...	...	...	19.74	114	21.07	42.59	...	...	59.17	137	58.33	33.15	28.22	...	23.62	...	19.24
9	...	...	...	25.44	110	(9 yr.)	...	...	...	21.48	140	(9 yr.)	44.25	...	33.52	...	...	(8 yr.)
1850	...	...	...	19.56	84	...	...	...	...	44.88	157	...	26.98	...	...	14.51	...	...
1	...	...	...	30.86	123	...	...	...	...	35.14	142	...	...	...	...	17.98	...	...
2	...	...	...	27.44	118	...	...	...	...	43.78	145	...	...	...	...	23.62	...	...
3	...	...	...	27.08	128	...	...	...	...	46.11	130	...	...	...	...	14.52	...	...
4	...	...	...	15.35	105	...	...	...	...	29.28	136	...	...	...	...	30.54	...	...
5	...	...	...	23.15	124	...	...	...	...	52.85	138	...	28.21	...	...	18.25	...	...
6	...	...	...	24.93	118	...	...	...	...	43.31	116	...	29.76	134	...	22.73	151	...
7	...	...	...	22.15	105	...	...	...	...	50.95	135	...	28.90	138	...	17.20	113	...
8	...	...	...	21.55	107	23.75	43.00	...	...	39.60	139	40.74	26.01	158	...	33.04	129	22.59
9	...	...	...	14.85	95	...	35.00	...	...	42.06	128	...	21.82	156	...	23.31	...	...
1860	...	...	...	19.67	119	...	54.63	144	...	82.81	182	...	25.38	133	...	21.05	...	...
1	...	...	...	24.04	147	...	69.45	155	...	59.36	157	...	29.16	159	...	28.19	...	...
2	...	...	...	21.85	119	...	28.27	98	...	23.98	111	...	22.08	139	...	21.72	...	...
3	...	...	...	23.68	145	...	68.83	146	...	47.08	152	...	36.42	165	...	40.67	...	...
4	...	...	...	19.75	121	...	47.00	114	...	69.12	187	...	27.40	144	...	28.11	...	...
5	...	...	...	15.51	108	...	24.11	52	...	36.29	128	...	15.94	119	...	23.07	...	...
6	...	...	...	20.11	116	...	51.18	142	...	36.81	149	...	22.41	107	...	23.55	...	...
7	...	...	...	19.05	112	...	61.04	112	...	59.68	126	...	25.79	133	...	22.27	...	...
8	...	...	...	19.99	113	19.85	35.98	110	47.55	43.05	127	50.02	18.27	120	24.47	18.08	...	25.00
9	...	...	...	14.74	117	...	54.39	114	...	48.19	134	...	24.58	129	...	23.87	...	...
1870	...	...	...	23.84	119	...	79.06	154	...	64.22	178	...	33.77	129	...	27.53	...	...
1	...	...	...	23.25	137	...	45.45	119	...	52.27	141	...	30.17	125	...	18.25	131	...
2	...	...	...	22.66	146	...	49.22	131	...	37.12	161	...	32.52	136	...	31.76	160	...
3	...	...	...	21.00	139	...	62.62	138	...	73.40	176	...	25.61	134	...	33.43	157	...
4	...	...	...	17.23	127	...	38.71	135	...	63.60	173	...	28.10	134	...	24.09	138	...
5	...	...	...	25.21	157	...	67.03	162	...	46.25	153	...	32.87	158	...	29.25	181	...
6	28.73	100	...	13.43	110	...	53.42	130	...	45.69	156	...	24.04	134	...	23.63	...	...
7	20.48	103	...	24.85	135	...	30.28	119	...	50.66	147	...	24.10	124	...	20.82	...	...
8	39.72	143	29.64	22.08	112	21.24	56.33	134	53.53	49.77	129	54.02	25.36	116	28.11	29.76	...	25.24
9	41.34	106	(3 yr.)	20.69	130	...	67.30	157	...	63.19	167	...	19.28	127	...	21.07	...	...
1880	31.79	116	...	22.48	149	...	49.12	134	...	29.51	142	...	28.48	147	...	...	...	...
1	24.78	101	...	18.02	135	...	29.59	117	...	41.09	163	...	24.08	134	...	...	...	...
2	35.68	103	...	15.70	134	...	42.62	121	...	42.28	112	...	22.40	131	...	...	...	...
3	39.65	122	...	26.76	161	...	32.22	114	...	46.32	157	...	23.71	130	...	24.05	160	...
4	31.96	92	...	18.74	138	...	43.49	136	...	44.04	159	...	25.85	128	...	21.55	171	...
5	33.44	110	...	15.89	133	...	26.85	112	...	39.91	145	...	26.94	123	...	28.29	176	...
6	28.90	89	...	14.42	141	...	53.66	152	...	39.43	152	...	24.00	128	...	21.39	189	...
7	37.52	105	...	25.70	164	...	81.54	242	...	60.16	189	...	32.39	153	...	24.21	174	...
8	27.83	117	33.29	14.55	131	19.30	33.08	143	45.93	23.01	132	42.95	19.42	123	24.66	18.45	151	23.65
9	39.96	123	...	20.87	143	...	49.36	155	...	57.16	186	...	27.14	125	...	30.80	180	...
1890	46.73	126	...	25.78	139	...	73.02	162	...	81.42	184	...	24.24	140	...	27.51	173	...
1	30.33	93	...	14.01	113	...	41.68	143	...	55.30	200	...	26.73	126	...	23.25	160	...
2	81.23	122	...	21.53	137	...	64.98	146	...	69.26	189	...	24.96	124	...	...	...	...
3	40.12	145	...	21.49	129	...	88.26	147	...	49.90	208	...	26.80	140	...	27.46	146	...
4	23.72	103	...	20.78	134	...	44.02	143	...	38.42	188	...	22.60	138	...	27.39	151	...
5	33.01	123	...	21.28	130	...	59.11	105	...	31.86	170	...	17.04	131	...	19.93	119	...
6	31.50	103	...	15.17	121	...	44.97	121	...	42.40	157	...	25.16	124	...	20.88	136	...
7	27.17	106	...	15.42	119	...	42.53	115	...	42.52	136	...	25.85	117	...	20.45	153	...
8	31.76	118	33.55	20.75	116	20.71	60.06	131	56.80	43.17	149	51.12	15.61	102	23.61	20.41	164	24.23
9	32.40	107	...	18.84	119	...	38.85	141	...	55.90	172	...	28.87	116	...	20.68	170	(9 yr.)
1900	36.61	124	...	21.68	133	...	34.41	110	...	66.54	170	...	26.09	139	...	19.14	135	...
1	36.75	122	...	18.01	124	...	38.48	110	...	40.10	151	...	27.45	113	...	23.66	147	...
2	27.06	93	...	16.02	123	...	16.17	87	...	43.07	176	...	23.08	102	...	21.92	151	...
3	35.69	140	...	25.47	134	...	49.27	136	...	38.62	169	...	28.43	130	...	25.86	139	...
4	34.35	125	...	20.31	117	...	33.23	124	...	45.93	155	...	29.72	128	...	22.41	139	...
5	34.61	116	...	22.28	131	...	36.76	108	...	35.03	144	...	25.64	129	...	32.09	168	...
6	32.37	121	...	26.51	127	...	42.84	125	...	31.89	159	...	22.29	114	...	23.31	155	...
7	40.12	132	...	17.78	125	...	31.46	119	...	31.32	132	...	22.26	102	...	25.92	167	...
8	30.52	106	34.05	24.56	125	21.15	44.01	125	36.55	45.65	168	43.41	17.72	130	25.36	16.50	149	23.15
9	39.11	107	...	27.69	138	...	34.07	121	...	32.27	181	...	25.86	171	...	27.29	170	...
1910	37.02	135	33.54	24.62	116	21.15	49.00	133	46.98	46.91	139	48.26	24.61	167	26.13	25.22	205	23.38
Aver.																		
No. of																		
Yrs.			(35)			(71)			(61)			(71)			(67)			(66)



9. **Remarkable Falls of Rain.**—The following are the more remarkable falls of rain in the States of New South Wales, Queensland, Western Australia, and South Australia, which have occurred within a period of twenty-four hours:—

**HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1910 INCLUSIVE.**

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Albion Park ...	8 Feb., 1895	10.00	Leconfield... ..	9 Mar., 1893	14.53
Albury ...	14 " 1898	10.70	Liverpool ...	23 Feb., 1874	10.39
Alme Dorrigo ...	22 Jan., 1893	10.27	Macksville* ...	23 Feb., 1908	10.00
Anthony ...	28 Mar., 1887	17.14	Madden's Creek ...	2 " "	10.36
" ...	15 Jan., 1890	13.13	Maitland W. ...	9 Mar., 1893	14.79
Arnold Grove ...	28 May, 1889	11.13	Major's Creek ...	14 Feb., 1898	12.32
" ...	20 Mar., 1892	10.08	Mittagong... ..	6 Mar., 1893	11.71
Araluen ...	14 Feb., 1898	10.51	Morpeth ...	9 " "	21.52
" ...	15 " "	13.36	Mount Kembla ...	14 Feb., 1898	10.25
Billambil ...	14 Mar., 1894	12.94	" " "	2 Feb., 1908	10.27
Bowral ...	6 " 1893	11.94	Myra Vale ...	14 " 1898	10.00
Bowraville... ..	22 June, 1898	11.50	Nambucca Heads ...	3 Apr., 1905	10.62
Broger's Creek ...	14 Feb., " "	20.05	Nepean Tunnel ...	14 Feb., 1898	12.30
" ...	19 July, 1910	12.22	Newcastle... ..	19 Mar., 1871	11.17
Bulli Mountain ...	19 Mar., 1894	10.45	" ...	9 " 1893	11.14
" ...	13 Feb., 1898	17.14	" ...	24 Feb., 1908	10.02
Burwood ...	28 May, 1889	11.75	Nowra ...	11 July, 1904	11.50
Camden ...	11 July, 1904	10.90	Parramatta ...	28 May, 1889	11.94
Camden Haven ...	22 Jan., 1895	12.23	" ...	20 Mar., 1892	11.01
Canley Vale ...	28 May, 1889	10.06	Port Macquarie ...	9 Nov., 1887	10.76
" ...	20 Mar., 1892	10.85	Port Stephens ...	9 Feb., 1889	10.15
Castle Hill... ..	28 May, 1889	13.49	Prospect ...	28 May, " "	12.37
Cockle Creek ...	23 Feb., 1908	10.45	Raymond Terrace ...	28 Sep., 1903	10.32
Colombo Lyttleton ...	5 Mar., 1893	12.17	Richmond ...	28 May, 1889	12.18
Condong ...	27 " 1887	18.66	Robertson... ..	14 Feb., 1898	10.00
" ...	15 Jan., 1890	11.50	" ...	10 July, 1904	10.50
Cookville ...	1 Apr., 1892	11.31	Rooty Hill ...	27 May, 1889	11.85
Coramba ...	11 June, 1893	10.83	Rylstone ...	28 " "	10.26
Cordeaux River ...	26 Feb., 1873	10.98	Seven Oaks ...	22 June, 1898	11.06
" ...	3 " 1890	11.51	Springwood ...	7 Mar., 1894	10.55
" ...	14 Feb., 1898	22.58	Taree ...	28 Feb., 1892	12.24
" ...	31 Aug., 1906	10.31	Terara ...	26 " 1873	12.57
Cudgen ...	15 Mar., 1894	10.23	Tomago ...	9 Mar., 1893	13.76
Dapto West ...	14 Feb., 1898	12.05	Tongarra ...	9 July, 1904	11.10
Darkes' Forest ...	8 " 1895	11.10	Tongarra Farm ...	14 Feb., 1898	15.12
Dunheved ...	28 May, 1889	12.40	Towamba ...	5 Mar., 1893	20.00
Eden ...	4 " 1875	10.52	Tweed Heads ...	14 Jan., 1890	10.53
Fernmount ...	2 Feb., 1890	10.36	" ...	14 Mar., 1894	11.40
" ...	2 June, 1903	11.29	Trial Bay ...	9 " 1893	11.13
Goorangoola ...	9 Mar., 1893	10.34	Wollongong ...	26 Feb., 1873	11.00
Guy Fawkes ...	2 June, 1903	11.30	" ...	5 Apr., 1882	10.00
Hercynia ...	28 May, 1889	11.85	Woolgoolga ...	11 June, 1893	10.83
Holy Flat ...	12 Mar., 1887	12.00	Yellow Rock ...	14 Feb., 1898	11.69
" ...	28 Feb., 1892	12.24	South Head ...		
Jamberoo ...	14 " 1898	10.92	(near Sydney) ...	29 Apr., 1841	20.12
Kareela ...	20 Oct., 1902	11.73	" " ...	16 Oct., 1844	20.41
Kempsey ...	10 Mar., 1893	10.34			

\* 6.50 inches fell in 2 hours.

**HEAVY RAINFALLS, QUEENSLAND, UP TO 1910 INCLUSIVE.**

Anglesey ...	26 Dec., 1909	18.20	Beenleigh ...	21 Jan., 1887	11.30
Ascot ...	14 Mar., 1903	11.34	" ...	14 Mar., 1908	10.40
Ayr ...	20 Sep., 1890	14.58	Bloomsbury ...	14 Feb., 1893	17.40
" ...	25 Mar., 1891	10.19	" ...	27 Jan., 1896	10.52
" ...	26 Jan., 1896	10.50	" ...	10 " 1901	16.62

## HEAVY RAINFALLS, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Bloomsbury ...	4 Mar., 1906	11.36	Crohamhurst		
" ...	9 Jan., 1908	11.30	(Blackall Range)	9 Jan., 1898	19.55
Boggo Road, Junction	14 Mar., 1908	10.42	" " ...	6 Mar., "	16.01
Botanic Gardens, Bris.	" "	10.80	" " ...	26 Dec., 1909	13.85
Bowen ...	13 Feb., 1893	14.65	Crow's Nest ...	2 Aug., 1908	11.17
" ...	20 Jan., 1894	11.11	Croydon ...	29 Jan., 1908	15.00
Bowen Park ...	16 Feb., 1893	10.38	Cryna (Beaudesert)...	21 " 1887	14.00
" ...	14 Mar., 1908	11.50	Donaldson ...	27 Jan., 1891	11.29
Brisbane ...	21 Jan., 1887	18.31	Dungeness ...	16 Mar., 1893	22.17
" ...	14 Mar., 1908	11.18	" ...	19 Jan., 1894	11.84
Bromby Park (Bowen)	14 Feb., 1893	13.28	" ...	17 Apr., "	14.00
" " "	20 Jan., 1894	11.20	Dunira ...	9 Jan., 1898	18.45
Brookfield ...	14 Mar., 1908	14.95	" ...	6 Mar., "	15.95
Buderim Mountain ...	11 Jan., 1898	26.20	Eddington (Clonc'ry)	23 Jan., 1891	10.33
" " "	9 Mar., 1898	11.10	Emu Park ...	31 " 1893	10.00
Bulimba (Brisbane)...	16 Feb., 1893	10.40	Enoggera Railway ...	14 Mar., 1908	12.14
Bundaberg ...	31 Jan., 1893	10.15	" Reservoir	" "	10.98
Burketown ...	15 " 1891	13.58	Ernest Junction ...	" "	13.00
" ...	12 Mar., 1903	14.52	Esk ...	21 Jan., 1887	10.70
Bustard Head ...	18 Feb., 1888	10.14	" ...	14 Mar., 1908	11.12
" " "	30 Jan., 1893	11.85	Fassifern ...	21 Jan., 1887	10.20
Caboolture ...	21 " 1887	10.00	Flat Top Island ...	22 Dec., 1909	12.96
" ...	10 " 1898	10.28	Floraville ...	6 Jan., 1897	10.79
Cairns ...	11 Feb., 1889	14.74	" ...	11 Mar., 1903	12.86
" ...	21 Apr., "	12.40	Geraldton		
" ...	5 " 1891	14.08	(now Innisfail)	11 Feb., 1889	17.13
" ...	19 Jan., 1892	10.56	" " "	31 Dec., "	12.45
" ...	14 " 1909	11.56	" " "	25 Jan., 1892	11.10
Caloundra ...	21 " 1887	10.50	" " "	6 Apr., 1894	16.02
Cape Capricorn ...	17 " 1905	10.16	" " "	3 Mar., 1896	11.42
Cape Grafton ...	5 Mar., 1896	13.37	" " "	7 " 1899	10.25
Cardwell ...	18 " 1887	10.15	" " "	18 Apr., "	13.20
" ...	30 Dec., 1889	12.00	" " "	24 Jan., 1900	15.22
" ...	2 Jan., 1890	10.06	" " "	6 " 1901	11.35
" ...	23 Mar., "	12.00	" " "	29 Dec., 1903	21.22
" ...	18 " 1904	18.24	" " "	17 Mar., 1904	10.35
Cedar Pocket ...	26 Dec. 1909	11.36	" " "	30 Jan., 1908	11.76
Central Kin Kin ...	" "	10.17	" " "	14 " 1909	11.65
Chiefswood ...	14 Mar., 1908	11.01	Gin Gin ...	16 " 1905	13.61
Childers ...	6 " 1898	11.28	Gladstone...	18 Feb., 1888	12.37
Clare ...	26 Jan., 1896	15.30	" ...	31 Jan., 1893	14.62
Cleveland ...	13 " 1910	10.13	Glass Mountains ...	26 Dec., 1909	10.48
" ...	2 June "	11.20	Glen Broughton ...	5 Apr., 1894	18.50
Coen ...	20 Apr., 1903	11.11	Glen Prairie ...	18 " 1904	12.18
" ...	1 " 1910	10.71	Gold Creek Reservoir	16 Feb., 1893	11.16
Collaroy ...	30 Jan., 1896	14.25	" " "	14 Mar., 1908	12.50
" ...	30 " 1910	10.25	Goodna ...	21 Jan., 1887	11.00
Cooktown ...	22 " 1903	12.49	" ...	14 Mar., 1908	11.03
" ...	19 " 1907	11.70	Goondi Mill (Gerald'n)	20 Jan., 1892	11.10
Cooran ...	1 Feb., 1893	13.62	" " "	6 Apr., 1894	15.69
" ...	9 June, "	10.12	" " "	7 Mar., 1899	10.08
" ...	26 Dec., 1908	14.08	" " "	18 Apr., "	14.78
Cooroy ...	9 June 1893	13.60	" " "	24 Jan., 1900	13.30
" ...	10 Jan., 1898	13.50	" " "	6 " 1901	10.70
" ...	6 Mar., "	10.04	" " "	2 Mar., "	10.67
Cressbrook ...	16 Feb., 1893	10.65	" " "	29 Dec., 1903	17.83
Crohamhurst			" " "	17 Mar., 1904	10.00
(Blackall Range)	31 Jan., "	10.78	" " "	21 " 1910	10.38
" " "	2 Feb., "	35.71	Gympie ...	9 " 1901	11.64
" " "	9 June, "	13.31	Halifax ...	5 Feb., 1899	15.37

## HEAVY RAINFALLS, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Halifax ...	8 Mar., 1899	11.00	Landsborough ...	26 Dec., 1909	14.00
" ...	6 Jan., 1901	15.68	Low Island ...	10 Mar., 1904	15.07
" ...	8 Feb. "	10.50	Lucinda ...	4 Feb., 1899	11.10
" ...	26 Mar., 1903	10.07	" ...	17 " 1906	13.35
" ...	30 Jan., 1906	10.41	" ...	10 Mar., 1906	14.60
Hambledon Mill ...	7 " 1908	11.00	Lytton ...	21 Jan., 1887	12.85
" "	13 " 1909	13.80	" ...	13 Mar., 1892	10.60
" "	16 Feb., 1910	11.45	" ...	16 Feb., 1893	11.74
Harvey Creek ...	8 Mar., 1899	17.72	" ...	20 Mar., 1898	10.20
" "	25 Jan., 1900	12.53	Mackay ...	17 Feb., 1888	10.10
" "	25 May, 1901	14.00	" ...	15 " 1893	10.46
" "	14 Mar., 1903	12.10	" ...	3 " 1898	11.95
" "	21 Apr., 1903	10.10	" ...	5 Jan., 1904	10.45
" "	11 Jan., 1905	16.96	" ...	23 Dec., 1909	13.96
" "	28 " 1906	12.29	" ...	12 Mar., 1910	10.31
" "	20 " 1907	10.13	Sugar Experimental		
" "	8 " 1908	10.31	Farm, Mackay ...	23 Dec., 1909	12.00
" "	30 " "	11.31	Macnade Mill		
" "	25 Mar. "	11.84	(Townsville) ...	28 Mar., 1891	10.61
" "	14 Jan., 1909	14.40	" ...	15 " 1893	10.50
" "	16 Feb., 1910	10.90	" ...	18 Jan., 1894	12.56
Haughton Valley ...	26 Jan., 1896	18.10	" ...	17 Apr. "	14.26
Hillcrest (Mooloolah) ...	26 Dec., 1909	13.35	" ...	5 Feb., 1899	15.20
Holmwood (Woodford) ...	2 Feb., 1893	16.19	" ...	6 Jan., 1901	23.33
" "	10 Jan., 1898	12.40	Maleny ...	14 Mar., 1908	10.95
Homebush ...	3 Feb. "	12.04	" ...	26 Dec., 1909	14.76
" ...	21 Mar. "	10.26	Manly ...	14 Mar., 1908	11.90
" ...	11 Jan., 1901	11.40	Mapleton ...	" "	14.29
Howard ...	15 " 1905	19.55	" ...	26 Dec., 1909	15.72
Indooroopilly ...	14 Mar., 1908	10.28	Marlborough ...	17 Feb., 1888	14.24
Ingham ...	18 Jan., 1894	12.60	" ...	29 Jan., 1896	10.84
" ...	7 Apr. "	10.10	Mayne Junction ...	14 Mar., 1908	10.30
" ...	6 Jan., 1901	13.59	Mein ...	4 Apr., 1895	10.50
" ...	25 Dec., 1903	12.30	Milton ...	14 Mar., 1908	12.24
Inkerman ...	21 Sep., 1890	12.93	Mirani ...	12 Jan., 1901	16.59
Inneshowen			" ...	28 Mar., 1903	10.16
(Johnstone River) ...	30 Dec., 1889	14.01	Monkira ...	1 Feb., 1906	11.61
Inskip Point ...	13 Mar., 1892	10.65	Mooloolah ...	13 Mar., 1892	11.53
Isis Junction ...	6 " 1898	13.60	" ...	2 Feb., 1893	29.11
Kamerunga (Cairns) ...	20 Jan., 1892	13.61	" ...	9 June, "	11.50
" "	23 Feb., 1894	10.10	" ...	6 Mar., 1898	14.43
" "	6 Apr. "	14.04	Morningside ...	14 Mar., 1908	10.50
" "	5 " 1895	12.31	Mount Crosby ...	" "	14.00
" "	5 Mar., 1896	11.81	Mount Gravatt ...	" "	10.80
Kamerunga ...	8 " 1899	10.50	Mount Perry ...	24 Feb., 1887	10.00
" "	21 Apr., 1903	11.75	Mourilyan ...	14 Jan., 1909	13.00
Kilkivan Junction ...	10 Jan., 1898	11.08	Mundoolun ...	21 Jan., 1887	17.95
Kululu, Mackay ...	11 " 1901	11.70	Mungar Junction ...	10 Mar., 1901	10.20
" "	12 " 1905	10.94	Murrarie ...	14 " 1908	11.50
Kuranda ...	6 Mar., 1899	14.12	Musgrave ...	6 Apr., 1894	13.71
" ...	20 Apr., 1903	14.16	Nambour ...	9 Jan., 1898	21.00
" ...	14 Jan., 1909	12.37	" ...	7 Mar. "	13.28
" ...	27 " 1910	9.40	" ...	27 Dec., 1909	16.80
" ...	28 " "	9.28	Nanango ...	9 June, 1893	10.00
Lake Nash ...	10 " 1895	10.25	Nerang ...	15 " 1892	12.35
" ...	20 Mar., 1901	10.02	" ...	14 Mar., 1908	10.95
Landsborough ...	2 Feb., 1893	25.15	Netley (Rockhampton) ...	29 Jan., 1896	11.77
" ...	9 June "	12.80	Normanton ...	14 " 1905	10.72
" ...	9 Jan., 1898	19.54	North Pine ...	21 " 1887	11.60
" ...	7 Mar. "	10.35	" "	16 Feb., 1893	14.97

## HEAVY RAINFALLS, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Nundah ...	14 Mar., 1908	12.00	Taringa ...	14 Mar., 1908	11.40
One Mile, Gympie ...	10 " 1901	11.40	Tewantin ...	10 Jan., 1898	10.51
Oxenford ...	14 " 1908	15.65	" ...	30 Mar., 1904	12.30
Palmwoods ...	4 Feb., 1893	12.30	" ...	14 Apr. "	11.36
" ...	10 Jan., 1898	15.85	The Hollow (Mackay)	23 Feb., 1888	15.12
" ...	7 Mar. "	13.02	" ...	? Mar., 1891	10.39
" ...	25 Dec., 1909	17.75	Thornborough ...	20 Apr., 1903	18.07
Peachester ...	26 " "	14.91	Tierawoomba ...	2 Feb., 1898	10.36
Pinkenba ...	14 Mar., 1908	11.63	Tooolombah ...	29 Jan., 1896	11.70
Pittsworth ...	11 " 1890	14.68	Toowong ...	14 Mar., 1908	11.60
Port Douglas ...	5 " 1887	13.00	Townsville ...	24 Jan., 1892	19.20
" "	12 Feb., 1888	10.00	" ...	28 Dec., 1903	15.00
" "	20 Jan., 1892	11.50	Victoria Mill ...	6 Jan., 1901	16.67
" "	23 Feb., 1894	10.25	Walkerston ...	12 " 1905	10.60
" "	7 Apr. "	10.00	Walsh River ...	12 " 1903	10.22
" "	10 Mar., 1904	16.34	Woodford ...	2 Feb., 1893	14.93
" "	29 Dec. "	10.67	" ...	10 Jan., 1898	11.40
" "	11 Jan., 1905	14.68	Woodlands (Yeppoon)	10 " 1889	10.00
Ravenswood ...	24 Mar., 1890	17.00	" "	26 Jan., 1890	10.22
" ...	27 Jan., 1896	10.52	" "	25 Mar. "	14.25
Redcliffe ...	21 " 1887	14.00	" "	31 Jan., 1893	23.07
" ...	16 Feb., 1893	17.35	" "	30 " 1896	11.91
" ...	10 Jan., 1898	10.25	" "	9 Feb. "	13.97
Riverview ...	14 Mar., 1908	10.12	" "	7 Jan., 1898	14.50
Rockhampton ...	17 Feb., 1888	10.82	Woodstock ...	4 Nov., 1903	10.44
" ...	29 Jan., 1896	10.53	Woogaroo ...	14 Mar., 1908	11.20
Rosedale ...	6 Mar., 1898	12.60	Woombye ...	26 Dec., 1909	13.42
Sandgate ...	21 Jan., 1887	10.50	Wynnum ...	14 Mar., 1908	11.95
" ...	16 Feb., 1893	14.03	Yandina ...	1 Feb., 1893	20.08
Sherwood ...	14 Mar., 1908	11.08	" ...	9 June "	12.70
Somerset ...	28 Jan., 1903	12.02	" ...	9 Jan., 1898	19.25
Southport ...	14 Mar., 1908	11.05	" ...	7 Mar. "	13.52
St. Helena ...	16 Feb., 1893	11.20	" ...	28 Dec., 1909	15.80
St. Helens (Mackay)	24 " 1888	12.00	Yarrabah ...	14 Jan. "	11.20
" ...	22 Mar., 1898	10.00	Yeppoon ...	31 Jan., 1893	20.05
St. Lawrence ...	17 Feb., 1888	12.10	" ...	30 " 1896	11.02
" ...	30 Jan., 1896	15.00	" ...	8 " 1898	18.05
Sunnybank ...	14 Mar., 1908	11.40	" ...	8 Apr., 1904	10.70
Tabragalba ...	21 Jan., 1887	10.00	" ...	3 Feb., 1906	14.90
Tallebudgera ...	14 Mar., 1908	10.80	Zillmere ...	14 Mar., 1908	11.00
Tambourine Mountain	17 July, 1889	10.91			

## HEAVY RAINFALLS, SOUTH AUSTRALIA, UP TO 1910 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Arltunga ...	1 Mar., 1910	1.02	Port Darwin ...	7 Jan., 1897	11.67
" ...	2 " "	1.42	Powell's Creek ...	25 Feb., 1910	2.31
" ...	3 " "	7.77	" "	26 " "	1.21
" ...	4 " "	1.85	" "	27 " "	8.19
" ...	5 " "	1.24	Tennant's Creek ...	26 " "	1.18
Borroluola ...	14 " 1899	14.00	" "	27 " "	1.02
Lake Nash...	21 " 1901	10.25	" "	28 " "	9.22
Pine Creek ...	8 Jan., 1897	10.35			

## HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1910 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balla Balla ...	20 Mar., 1899	6.00	Obagama ...	18 Feb., 1896	7.22
" " ...	21 " 1899	14.40	" " ...	28 " 1910	12.00
Boodarie ...	3 Jan., 1894	10.03	Point Torment ...	17 Dec., 1906	11.86
" " ...	4 " "	5.22	Point Cloates ...	20 Jan., 1909	10.87
" " ...	21 Mar., 1899	14.53	Port Hedland ...	7 Feb., 1901	3.56
" " ...	6 Feb., 1901	1.91	" " ...	8 " "	9.55
" " ...	7 " "	9.16	Quanbun ...	29 Apr., 1910	6.55
Bamboo Creek ...	22 Mar., 1899	10.10	" " ...	30 " "	3.40
Carlton ...	11 Jan., 1903	10.64	Roebourne... ..	3 Apr., 1898	11.44
Cherrabun ...	28 Apr., 1910	2.90	" " ...	6 Mar., 1900	10.32
" " ...	29 " "	7.78	Tambrey ...	6 " "	11.00
Cossack ...	3 " 1898	12.82	" " ...	3 " 1903	10.46
" " ...	15 " 1900	6.89	Thangoo ...	17-19 Feb. '96	24.18
" " ...	16 " "	13.23	" " ...	23 Dec., 1898	11.15
Croydon ...	3 Mar., 1903	12.00	" " ...	20 Nov., 1910	7.40
Cocos Island ...	29 Nov., "	14.38	" " ...	21 " "	4.56
" " ...	26 Dec., 1907	8.00	Whim Creek ...	2 Apr., 1898	7.08
" " ...	27 " "	2.65	" " ...	3 " "	29.41
" " ...	8 July, 1908	10.21	" " ...	20 Mar., 1899	8.89
" " ...	9 " "	2.75	" " ...	21 " "	18.17
" " ...	23 " "	2.40	" " ...	6 " 1900	10.03
" " ...	24 " "	7.00	" " ...	3 " 1903	10.44
" " ...	25 " "	3.85	Wyndham ...	27 Jan., 1890	11.60
Derby ...	29 Dec., 1898	13.09	" " ...	11 " 1903	9.98
" " ...	30 " "	7.14	" " ...	12 " "	6.64
Kerdiadary ...	7 Feb., 1901	12.00	" " ...	13 " "	4.20
Millstream ...	5 Mar., 1900	10.00	Yeeda ...	28 Dec., 1898	8.42
Obagama ...	16 Feb., 1896	3.95	" " ...	29 " "	6.88
" " ...	17 " "	6.30	" " ...	30 " "	6.12

10. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter snow covers the ground to a great extent on the Australian Alps for several months, where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

11. **Hail.**—Hail falls throughout Australia most frequently along the southern shores of the continent, and in the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanised iron bear evidence of the weight and penetrating power of the stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are invariably associated with

tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

**12. Barometric Pressures.**—The mean annual barometric pressure (corrected to sea-level and standard gravity) in Australia varies from 29.80 inches on the north coast to 29.92 inches over the central and 30.03 inches in the southern parts of the continent. In January the mean pressure ranges from 29.70 inches in the northern and central areas to 29.91 inches in the southern. The July mean pressure ranges from 29.90 inches at Port Darwin to 30.13 at Alice Springs. Barometer readings, corrected to mean sea-level, have, under anticyclonic conditions in the interior of the continent, ranged from 30.81 inches to as low as 28.44 inches. This lowest record was registered at Townsville during a hurricane on the 9th March, 1903. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 105.

**13. Wind.**—(i.) *Trade Winds.* The two distinctive wind currents in Australia are, as previously stated, the south-east and westerly trade winds. As the belt of the earth's atmosphere in which they blow apparently follows the sun's ecliptic path north and south of the equator, so the area of the continent affected by these winds varies at different seasons of the year. During the summer months the anticyclonic belt travels in very high latitudes, thereby bringing the south-east trade winds as far south as 30° south latitude. The westerly trade winds are forced a considerable distance to the south of Australia, and are very rarely in evidence in the hot months. When the sun passes to the north of the equator, the south-east trade winds follow it, and only operate to the north of the tropics for the greater part of the winter. The westerly winds, by the same force, are brought into lower latitudes during the same period of the year. They sweep across the southern areas of the continent from the Leeuwin to Cape Howe, and during some seasons are remarkably persistent and strong. They occasionally penetrate to almost tropical latitudes, and though usually cold and dusty inland, are of the greatest service to the country, for being rain-bearing winds, moisture is by their agency precipitated over vast areas in the south of the continent.

(ii.) *Land and Sea Breezes.* The prevailing winds second in order of importance are the land and sea breezes. These generally blow at right angles to the coast-line in their early stages, but are deflected to the north and south in the middle and later periods of the blows.

On the east coast the sea breezes which come in from the north-east, when in full force, frequently reach the velocity of a gale during the afternoon in the summer months, the maximum hourly velocity, ordinarily attained about 3 p.m., not unfrequently attaining a rate of 35 to 40 miles per hour. This wind, although strong, is usually shallow in depth, and does not ordinarily penetrate more than 9 or 12 miles inland.

The land breezes on the east coast blow out from a south-westerly direction during the night.

On the western shores of the continent the directions are reversed. The sea breezes come in from the south-west, and the land breezes blow out from the north-east.

(iii.) *Inland Winds.* Inland, the direction of the prevailing winds is largely regulated by the seasonal changes of pressure, so disposed as to cause the winds to radiate spirally outwards from the centre of the continent during the winter months, and to circulate spirally from the seaboard to the centre of Australia during the summer months.

(iv.) *Prevailing Direction at the State Capitals.* In *Perth*, southerly (south-west to south-east) is the prevailing direction for August to April inclusive, and north-north-west to north-north-east for the midwinter months.

In *Adelaide* the summer winds are from the south-west and south, and in the winter from north-east to north.

In *Brisbane*, south-east winds are in evidence all the year round, but more especially during the months January, February, March and April.

In *Sydney* from May to September the prevailing direction is westerly, and for the remaining seven months north-easterly.

*Melbourne* winter winds are from north-west to north-east, and those of the summer from south-west to south-east.

At *Hobart* the prevailing direction for the year is from north-west.

Over the greater part of Australia January is the most windy month, i.e., is the month when the winds are strongest on the average, though the most violent wind storms occur at other times during the year, the time varying with the latitude.

**14. Cyclones and Storms.**—(i.) *General.* The "elements" in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north-westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first three months of the year these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurring in their path before reaching New Caledonia.

Anemometrical records for these storms do not exist, but the fact that towns visited by them have been greatly damaged indicates that the velocity must be very great. Fortunately the area covered by these storms is very small when compared with the southern cyclones, and the region affected during an individual visitation is very limited. The heaviest blows are experienced to the west of the vortex with south-east to south-west winds.

(ii.) *Severe Cyclones.* Very severe cyclones, popularly known as "Willy Willies," are peculiar to the north-west coast of Western Australia from the months of December to March inclusive. They apparently originate in the ocean, in the vicinity of the Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive, causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the Great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the interior of Western Australia from similar storms.

Cyclones occasionally develop from incipient monsoonal low-pressures in the interior of the continent. Their formation is apparently materially assisted by the advancing high-pressures to the west of them, for they seldom or never appear without this accompaniment. The velocity and duration of the resultant gales, too, have a distinct relation to the magnitude of pressure in the anticyclones. Evidence of excess of high pressures on such occasions indicates severe gales in the cyclones, and in the case of moderate pressures, moderate gales.

These cyclones do not attain their severest phases until they reach the seaboard. The most violent winds occur in the south-western quadrant, with south-west to south-east winds. The area affected on the coast-line is not usually very great. During the visitation of one of these storms, about 500 miles in diameter, in July, 1903, a strip of

land, only 80 miles in extent, was affected. But so severe was the gale within this region that steamers of from 8000 to 10,000 tons, leaving Port Jackson, were buffeted and tossed about like corks by the turbulent sea. Notwithstanding this, vessels 200 miles to the east lay becalmed and had no indication of the violent atmospheric upheaval relatively so near.

Though storms of this type may occur at any time of the year, they are more frequent during the months of August and September. The velocity of the wind has on one occasion reached the rate of 120 miles per hour.

(iii.) *Southerly Bursters.* The "Southerly Burster" is a characteristic feature of the eastern part of Australia. It is a cool, or cold, wind peculiar to the coastal districts of New South Wales, south of latitude 30°. In a modified form, however, it also appears in the interior of that State, in Victoria, and the western districts of Queensland.

The "Southerly Bursters" invariably follow periods of hot weather, and are a great relief to the population settled over the favoured areas. They occur in all months from August to May inclusive, but most frequently in November. The preceding winds in the early and late summer months are from a north-westerly, and in the midsummer months from a north-easterly direction. A rise in the barometer always takes place before their advent, but no relation has been established between the time this rise begins and the moment of the arrival of the wind itself, neither is there any apparent connection between the velocity of the wind and the rate of gradient of the barometric rise, notwithstanding that records of nearly fifteen hundred "Bursters," extending over a period of forty years, have been analysed with a view of ascertaining if such a connection could be established. All that can be said is that, should the rise be sharp and rapid, the life of the blow will be short, while a slow and gradual one indicates a long and steady blow from the south, after the initial "Burster" has passed. "Southerly Bursters" are usually first noted on the extreme south coast, and travel northward at a rate of 20 miles an hour. The rate of translation has ordinarily no definite relation to the velocity attained by the wind itself.

"Bursters" frequently occur simultaneously at several places along the seaboard, and occasionally they have been known to progress down the coast from north to south. While they may arrive at any time during the day or night, the interval between sundown and midnight is that in which they ordinarily occur.

This type of storm is usually associated with "V"-shaped depressions, but occasionally a condition of relatively high barometric pressures in Victoria will induce their occurrence. It is most frequent during seasons of sporadic rains, and very rare during good years in the interior. In the summer of 1890, the year of the great Darling River flood, only sixteen visitations occurred, and even these were of a very mild character. The series of good years in the interior of Australia, since 1903, has been remarkable for the small annual number of "southerly bursters."

The greatest number ever experienced in a single summer was sixty-two, the average being thirty-two.

In the months of December and January they are usually short lived, and two may occur within the twenty-four hours. In the early and late summer months the intervening periods of warm weather are longer, and the winds are longer sustained, the energy being supplied from the more pronounced high pressures prevailing at these seasons of the year. The velocity varies from a rate of a few miles an hour to over 80 miles per hour, the maximum puffs occurring about an hour after the arrival of the burster. During recent years there has been a falling-off both in their number and strength, the reason for which is not yet understood, but it is suspected that the gradual extension of the agricultural and pastoral industries to the interior of the country may be one of the causes of the change.

Winds of a like character, and possibly derived from similar atmospheric actions and conditions, are—

In Europe—"The Bora," a sharp, cold north-east wind, which blows from the Croatian and Illyrian Mountains along the coast of Dalmatia from Trieste southward ;



and the "Mistral," a violent northerly wind which blows from France to the Gulf of Lyons.

In North America, the "Northers" of Texas have similar characteristics, and in South America "The Pampero," a cold and strong southerly wind which blows over the Pampas of Argentina, is almost identical with the "Southerly Bursters." The "Tehuantepec" winds that blow on the Pacific side of Central America are also very similar.

All parts of Australia are subject during the summer months to hot, desiccating winds, of two kinds. The most common and general class are associated with low-pressure isobars. The more rare and local hot winds are caused by the heating of descending air on the lee-side of mountains. In Victoria the former class are known as "Brick Fielders," a name originally applied to the "Southerly Bursters" in Sydney, because of the dust they raised from the brickfields to the south of the city. When the goldfields were discovered in Victoria the miners hailing from Sydney gave the name to the dusty winds from the opposite quarter.

The hot winds on the south-eastern littoral are analogous to the "Chinook" winds which blow at the eastern foot of the Rocky Mountains; to the "Föhn" winds of the Alpine Valleys; and to the "North-Westers" of the Canterbury Plains in the Middle Island of New Zealand.

**15. Influences affecting Australian Climate.**—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shews a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have with the denudation of the surrounding hills from forests experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

It is pointed out by Abercromby,<sup>1</sup> as shewing the influence of irrigation on climate, that "Before the Suez Canal was made, the desert through which it is cut was said to be rainless; now since the Bitter Lakes have been filled up with water, rain falls on an average eight days in the year at Ismailia." And in the United States, General A. W. Greely<sup>2</sup> says, concerning "Heat Waves:" "It seems possible that the frequency and intensity of such visitations have diminished on the Pacific coast, since Tennant's record of hot days (classing as such those on which the temperature rose to 80° or above, at San Francisco) indicates that their annual number has very materially diminished since 1859. For seven years prior to 1859 such days averaged thirteen yearly, and since that time, up to 1871, the average yearly number is but four. The immense quantity of land placed under irrigation and the vast increase in vegetation are obvious reasons why there should be some diminution in this respect."

(i.) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalising one; thus, especially in equatorial regions and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of their shade temperatures, by altering the extent of radiating surface, by evaporation, and by checking the movement of air. While decreasing

1. "Seas and Skies," Hon. Ralph Abercromby. 8vo, London, 1888, p. 30.

2. "American Weather." 8vo, London, 1888, p. 253.

evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain, and the washing away of surface soil. Thus, when a region is protected by trees, steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus, the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

(ii.) *Direct Influences of Forest on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite. According to Dr. Hann, observations have been made in India and Germany which support the idea that the destruction of trees has had a most deteriorating effect upon the climate.<sup>1</sup> In the Cordilleras, clouds with rain falling from them can be seen hanging over forests, while over contiguous lands covered with shrubs or used for agriculture the sky is blue and the sun is shining.

In America the influence of forests on the rainfall is still debated, but in Europe authorities contend that forests encourage frequent rainfalls. Hann states that a surface which keeps the air moist and cool, and from which there is as great an evaporation as takes place from extended forests, must have a tendency to increase the amount and frequency of precipitation, as contrasted with an open country which is dry, but over which conditions are otherwise similar.

Obviously the settlement of this very important question is difficult. Observations would have to be taken, with different treatments of the land, over very extended periods. Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in tempering the effects of the climate is more than sufficient to disclose the importance of their protection and extension. Curtis, in a paper read before the Meteorological Congress in 1893, sets forth important evidence of the ill-effects on orchard and wheat country of the felling of trees for the timber trade.

In Michigan, where half a century ago peach trees flourished and were rarely injured by cold, the crops have now nearly disappeared, owing to the removal by timbermen of the shelter afforded by the forests. In Northern Kansas, too, from the same cause, the growing of peaches has been largely abandoned. Many of the South Californian citrus fruit-growers protect their orchards from the destructive effects of wind by the judicious planting of eucalyptus and other trees.

It is the rapid rate of evaporation (says Dr. Fernow), induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but nobody can say that it does not check the winds and the rapid evaporation due to them.

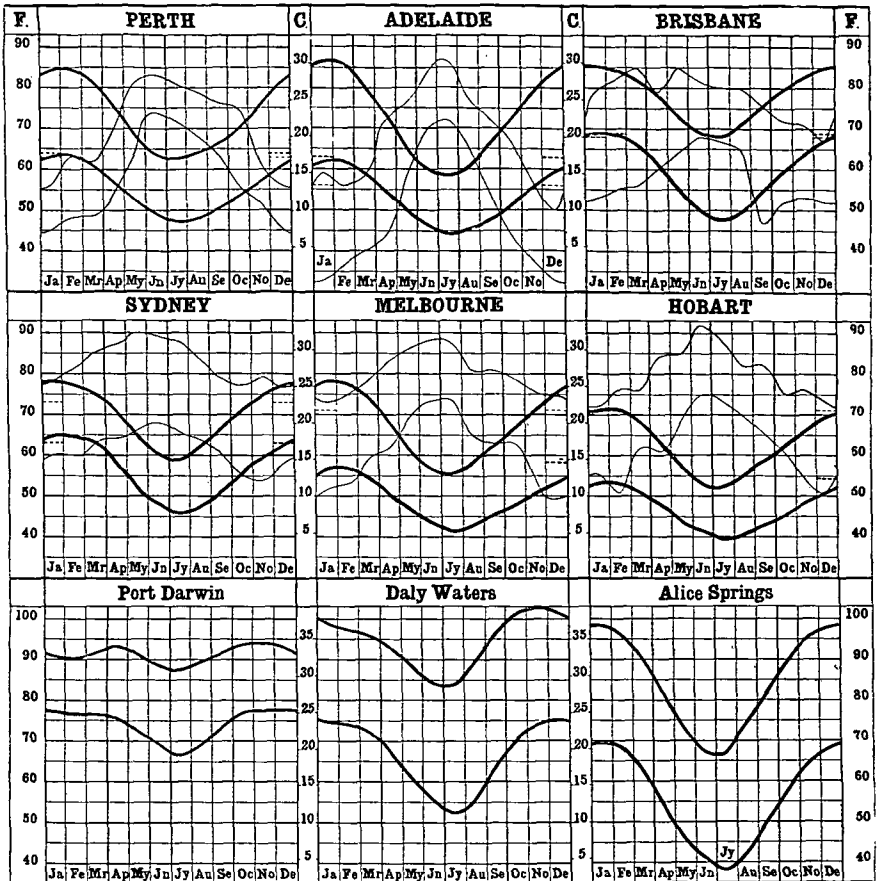
Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.<sup>2</sup>

**16. Comparison of Rainfalls and Temperatures.**—For the purpose of comparison the following lists of rainfalls and temperatures are given for various important cities throughout the world, for the site of the federal capital, and for the capitals of the Australian States:—

1. "Climatology," p 194.

2. See A. Woeikof, Petermann's Mittheilungen, 1835; and W. M. Fulton and A. N. Salisbury, "Convention of U.S.A. Weather Bureau Officials, 1898."

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



**EXPLANATION OF THE GRAPHS OF TEMPERATURE AND HUMIDITY.**—In the above graphs, in which the heavy lines denote 'temperature' and the thin lines 'humidity,' the fluctuations of mean temperature and mean humidity are shewn throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shewn in degrees Fahrenheit, the inner columns giving the corresponding values in Centigrade degrees. Humidities have not been obtained for Port Darwin, Daly Waters, and Alice Springs.

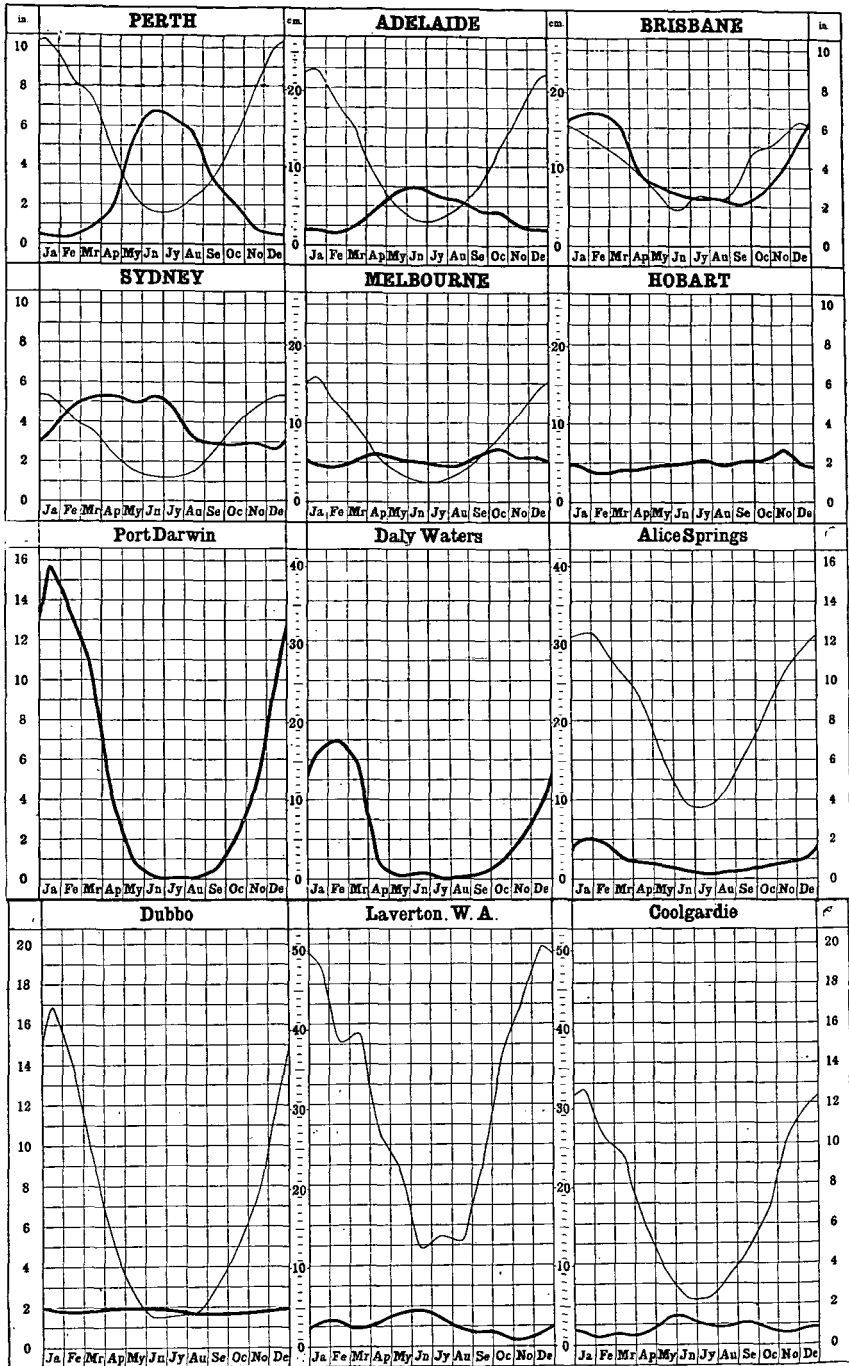
For the thin lines the degree numbers represent relative humidities, or the actual percentages of actual saturation on the total for the respective temperatures.

The upper temperature line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also shew the progression of the range between maximum and minimum temperatures throughout the year. The humidity curves shew the highest and lowest values of the mean monthly humidity at 9 a.m. recorded during a series of years.

**INTERPRETATION OF THE GRAPHS.**—The curves denote mean monthly values. Thus, taking, for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the greatest mean humidity, say for March, is about 62° and the least mean humidity for the month 48°; in other words, at Perth, the degree of saturation of the atmosphere by aqueous vapour for the month of March ranges between 62 % and 48 %

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



(For Explanation see next page.)

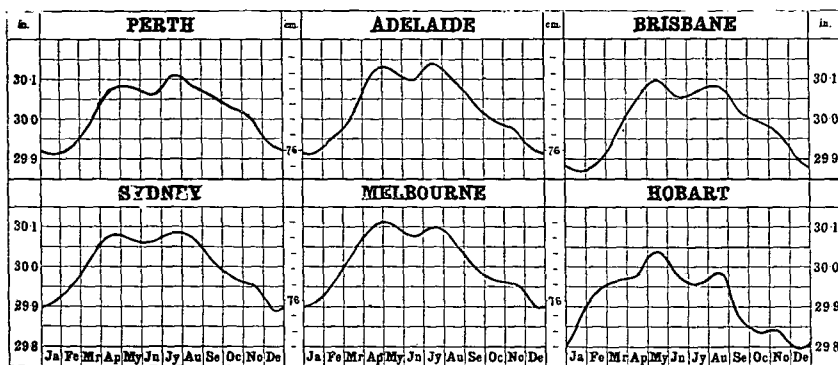
**EXPLANATION OF THE GRAPHS OF RAINFALL AND EVAPORATION.**—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shewn in inches (see the outer columns), and the corresponding metric scale (centimetres) is shewn in the two inner columns. The evaporation is not given for Hobart, Port Darwin, and Daly Waters.

**INTERPRETATION OF THE GRAPHS.**—The distance for any date from the zero line to the curve, represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about  $9\frac{1}{2}$  inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly 17 inches per month about the middle of January, and only about  $1\frac{1}{2}$  inches at the middle of June.

TABLE SHEWING MEAN ANNUAL RAINFALL AND EVAPORATION IN INCHES OF THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

—	Rainfall.	Evapora- tion.	—	Rainfall.	Evapora- tion.
Perth ...	33.54	66.01	Port Darwin ...	62.12	—
Adelaide ...	20.62	54.44	Daly Waters ...	27.25	—
Brisbane ...	47.25	48.61	Alice Springs ...	11.09	97.10
Sydney ...	47.95	37.42	Dubbo ...	22.39	81.03
Melbourne ...	25.40	38.30	Laverton, W.A. ...	9.87	—
Hobart ...	23.38	—	Coolgardie ...	9.37	86.60

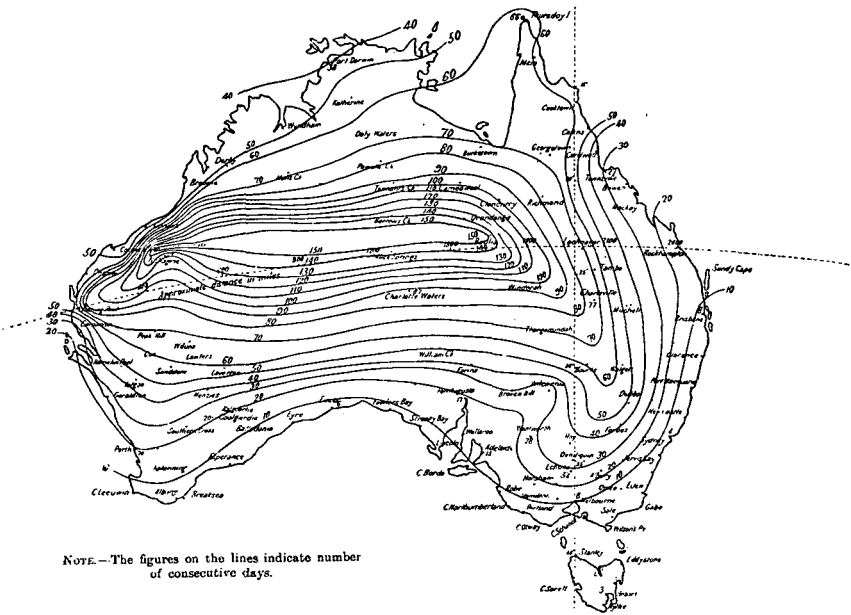
GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE STATE CAPITAL CITIES.



**EXPLANATION OF THE GRAPHS OF BAROMETRIC PRESSURE.**—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the State capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shewn in inches on about  $2\frac{1}{2}$  times the natural scale, and the corresponding pressures in centimetres are also shewn in the two inner columns, in which each division represents one millimetre.

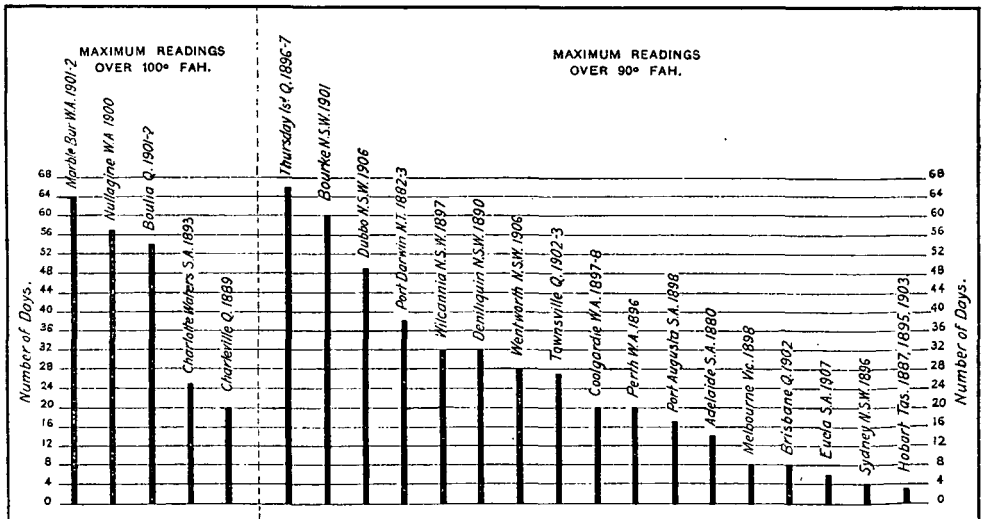
**INTERPRETATION OF THE BAROMETRIC GRAPHS.**—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29.88 inches, and there are maxima in the middle of May and August of about 30.10 and 30.08 respectively. The double maxima appear clearly on each graph.

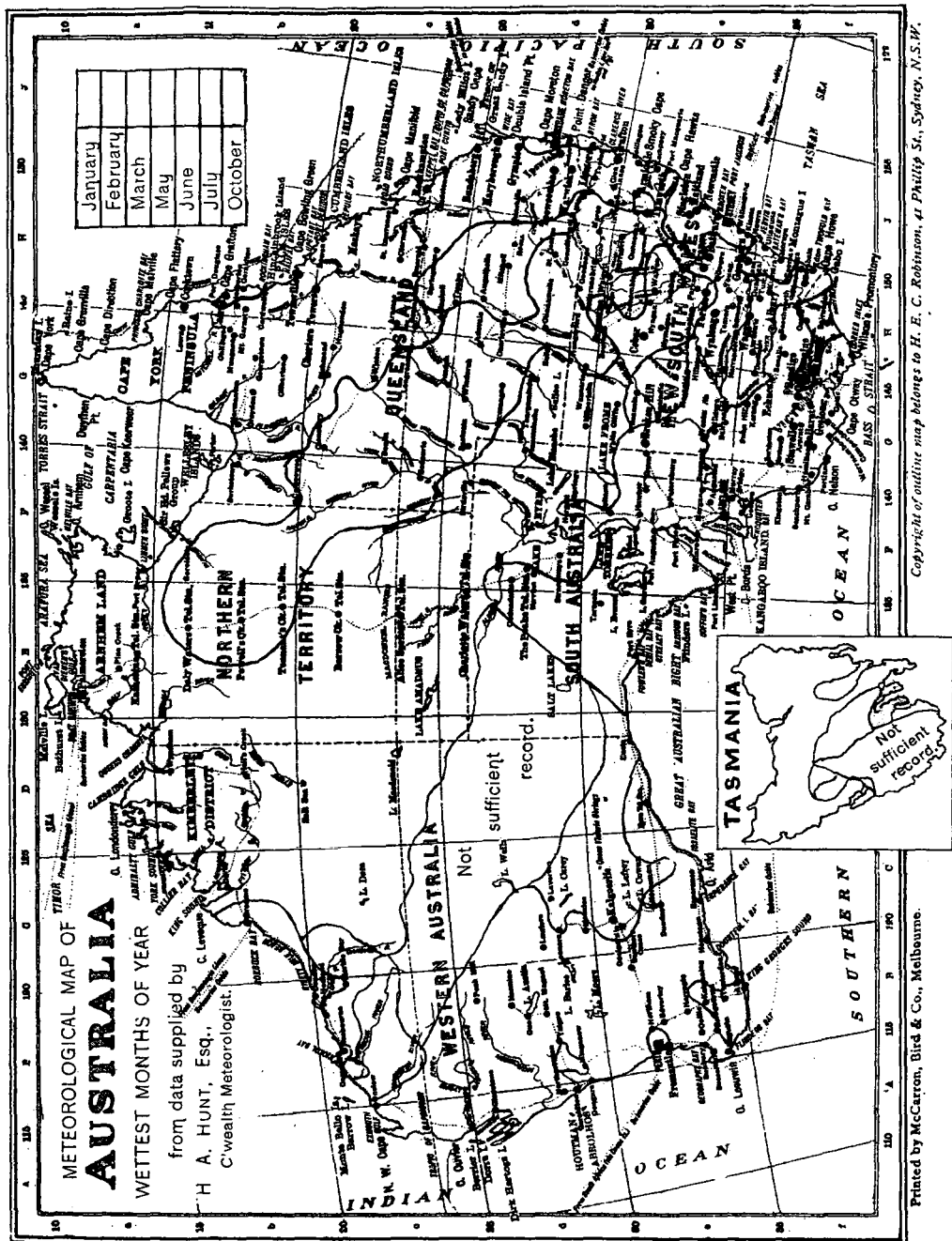
Chart indicating the area affected and period of duration of the Longest Heat Waves when the Maximum Temperature for consecutive 24 hours reached or exceeded 90° Fah.



NOTE.—The figures on the lines indicate number of consecutive days.

Diagram showing the greatest number of consecutive days on which the Temperature in the shade was over 100° and also over 90° at the places indicated.





### METEOROLOGICAL SUB-DIVISIONS.

- WEST AUSTRALIA.**
- No. 1. East Kimberley.
  2. West Kimberley.
  3. North-West.
  4. Gascoyne.
  5. South-West.
  6. Eucla.
  7. Eastern.

- SOUTH AUSTRALIA.**
8. Northern Territory.
  9. Far North and N.W.
  10. West.

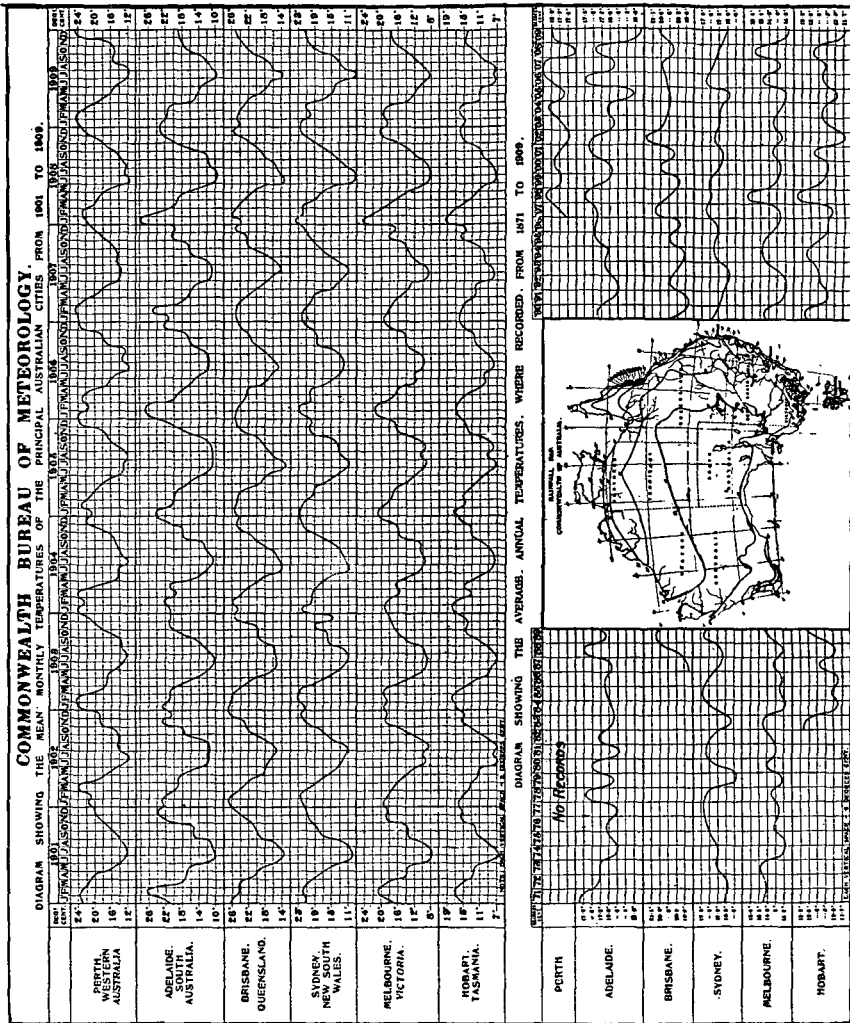
- QUEENSLAND.**
- No. 11. Upper North.
  12. North-East.
  13. Lower North.
  14. Central.
  15. Murray Valley.
  16. South-East.

- NEW SOUTH WALES.**
- No. 27. Western.
  28. North-West Plain.
  29. North-West Slope.
  30. Northern Tableland.
  31. North Coast.
  32. Hunter & Manning.

- VICTORIA.**
- No. 33. Central Tableland.
  - 33a. Metropolitan.
  34. Cent. Westn. Slope.
  35. Cent. Westn. Plain.
  36. Riverina.
  37. South-West Slope.
  38. Southern Tableland.
  39. South Coast.

- TASMANIA.**
- No. 43. North Central.
  44. Northern Country.
  45. Mallee.
  46. Wimmera.
  47. Western.
  48. Northern.
  49. W. Coast Mt. Region.
  50. Central Plateau.
  51. Midland.
  52. East Coast.
  53. Derwent.
  54. South-Eastern.

The above are the meteorological sub-divisions adopted by H. A. HUNT, Esq., C'wealth Meteorologist.



### EXPLANATION OF GRAPH.

The six continuous curves on the upper part of the diagram shew the fluctuations of mean monthly temperatures of the Australian capitals from 1901 to 1909. The base of each small square denotes one month, and the vertical side  $2^{\circ}$  Centigrade or  $3.6^{\circ}$  Fahrenheit.

The six curves in lower portion of the diagram similarly shew the fluctuations of the mean annual temperatures, from 1871 in the case of Adelaide, Sydney and Melbourne, from 1883, 1887 and 1897 in the case respectively of Hobart, Brisbane and Perth. The base of each rectangle represents one year, and the vertical side  $0.3^{\circ}$  Centigrade or  $0.54^{\circ}$  Fahrenheit.

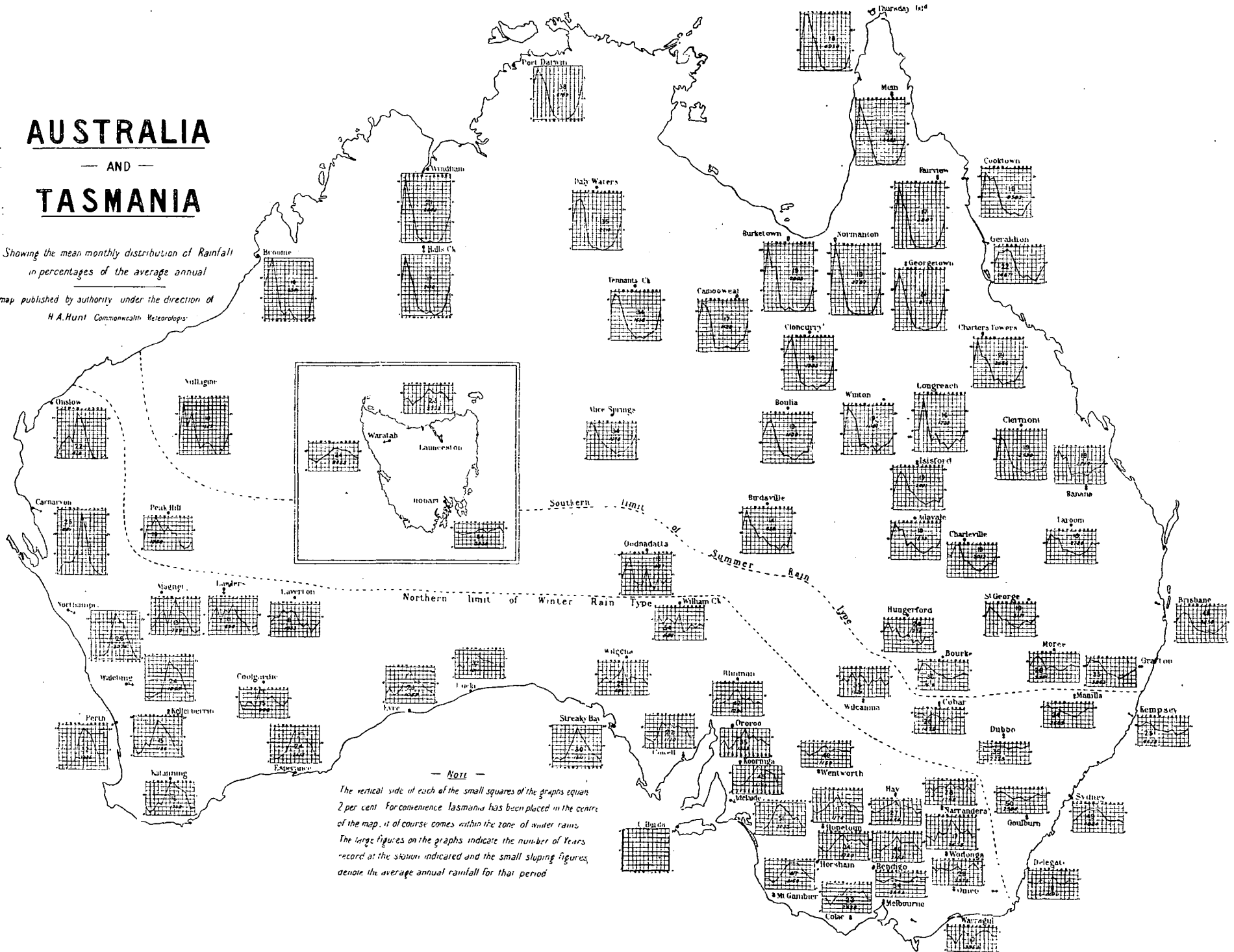
The map shews the areas affected by given amounts of annual rainfall, and is elsewhere given.



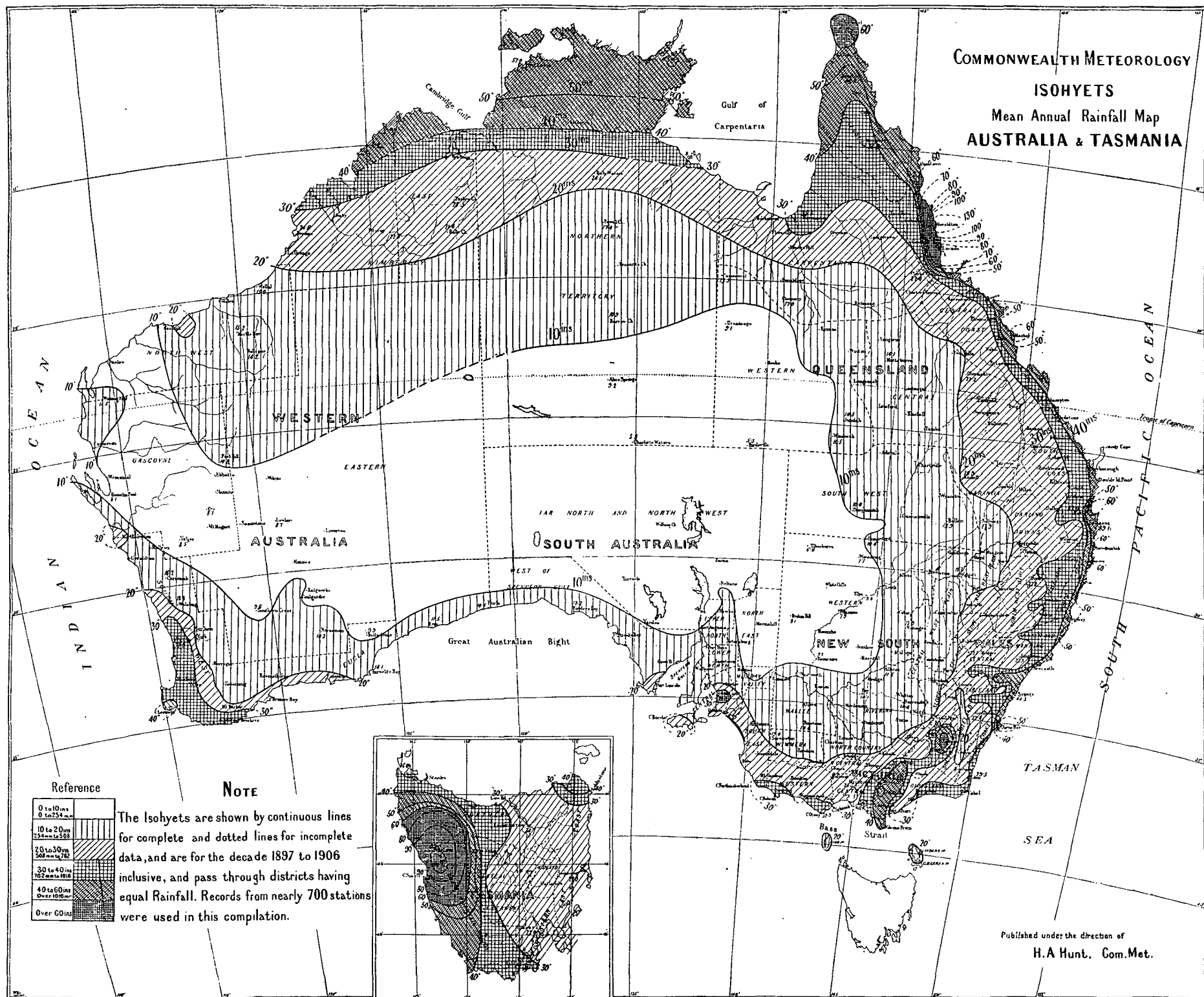
# AUSTRALIA — AND — TASMANIA

Showing the mean monthly distribution of Rainfall  
in percentages of the average annual

from map published by authority under the direction of  
H.A. Hunt Commonwealth Meteorologist



COMMONWEALTH METEOROLOGY  
ISOHYETS  
Mean Annual Rainfall Map  
AUSTRALIA & TASMANIA



**COMPARISON OF RAINFALLS AND TEMPERATURES  
OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.**

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.					
		Average.	Highest.	Lowest.	* Mean Summer.	† Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Amsterdam	6	27.29	40.59	17.60	63.2	36.8	90.0	4.1	64.4	35.4
Auckland	125	43.09	54.18	31.89	65.2	52.2	91.0	31.9	67.2	51.8
Athens	351	15.48	33.32	4.55	69.7	59.5	106.5	19.6	90.4	42.0
Bergen	146	89.10	102.80	73.50	56.8	34.5	88.5	4.8	57.9	33.6
Berlin	115	22.88	30.04	14.25	64.7	32.2	98.6	13.0	66.0	30.0
Berne	1,880	46.00	...	...	...	...	97.2	32.0	63.0	27.0
Bombay	37	71.15	114.89	33.41	83.0	75.2	100.0	55.9	84.8	74.2
Breslau	482	22.00	28.01	16.45	63.9	30.0	100.0	23.4	65.5	29.3
Brussels	328	28.35	41.18	17.73	62.6	36.0	95.5	4.4	63.7	34.5
Budapest	500	25.20	35.28	16.79	68.6	30.2	98.6	5.1	70.4	28.2
Buenos Ayres	72	36.82	80.73	21.53	73.2	51.5	103.1	25.9	74.2	50.5
Calcutta	21	61.98	89.32	39.38	85.1	66.9	108.2	44.2	85.4	65.5
Capetown	40	25.50	36.72	17.71	68.1	54.7	102.0	34.0	68.8	53.9
Caracas	3,420	30.03	47.36	23.70	68.3	65.3	87.8	48.2	69.2	63.7
Chicago	823	33.54	45.86	24.52	70.0	26.3	103.0	23.0	72.3	24.0
Christchurch	...	25.24	35.30	13.54	59.7	43.1	...	...	...	...
Christianaia	82	22.52	31.73	16.26	54.5	29.5	95.0	21.1	62.6	23.9
Colombo	40	83.83	139.70	51.60	81.5	79.9	95.8	65.0	82.6	79.1
Constantinople	...	28.75	42.74	14.78	74.0	43.5	103.6	13.0	75.7	42.0
Copenhagen	46	22.33	28.78	13.94	60.7	32.1	90.5	13.0	62.2	31.4
Dresden	115	26.80	34.49	17.72	63.0	32.3	93.4	15.3	61.6	31.6
Dublin	47	27.66	35.56	16.60	59.4	42.0	87.2	13.3	60.5	41.7
Durban	262	...	...	...	...	...	...	...	...	...
Edinburgh	441	25.21	32.05	16.44	55.9	38.8	85.3	16.6	57.2	38.3
Geneva	1,328	33.48	46.89	21.14	...	...	...	...	...	...
Genoa	157	51.29	108.22	28.21	...	...	...	...	...	...
Glasgow	184	38.49	56.18	29.05	52.7	41.0	84.9	6.6	...	...
Greenwich	159	24.12	35.54	16.38	61.3	39.3	100.0	4.0	62.7	38.6
Hong Kong	110	84.10	119.72	45.83	81.3	60.3	97.0	32.0	81.8	58.1
Johannesburg	5,750	31.63	50.00	21.66	65.4	54.4	94.0	23.3	68.2	48.9
Leipzig	117	24.69	31.37	17.10	63.1	31.5	97.3	14.8	64.8	30.6
Lisbon	312	29.18	52.79	17.32	69.6	51.3	94.1	32.5	...	...
London	18	24.04	38.20	18.23	61.2	39.3	92.3	9.4	62.8	38.7
Madras	22	49.06	88.41	18.45	87.6	75.9	113.0	57.5	87.6	75.3
Madrid	2,149	16.23	27.48	9.13	73.0	41.2	107.1	10.5	75.7	39.7
Marseilles	246	21.88	43.04	12.28	70.3	45.3	100.4	11.5	83.1	56.3
Moscow	526	18.94	29.28	12.07	63.4	14.7	99.5	44.5	66.1	11.9
Naples	489	33.60	50.43	16.02	76.1	49.3	104.0	23.0	77.2	48.2
New York	314	42.47	59.68	28.78	72.1	31.7	100.0	6.0	74.5	30.3
Ottawa	294	33.40	41.44	26.36	67.2	14.1	98.5	33.0	69.7	12.0
Paris	165	21.92	29.56	16.44	63.5	37.1	101.1	14.1	65.8	36.1
Pekin	143	24.40	36.00	18.00	...	...	114.0	5.0	79.2	23.6
Quebec	296	40.46	47.57	32.12	63.0	12.4	95.5	34.3	66.3	10.1
Rome	164	33.58	57.95	20.71	74.0	46.6	100.4	19.6	76.5	45.7
San Francisco	155	22.83	38.82	9.31	59.0	51.0	101.0	29.0	61.0	50.0
Shanghai	14	44.13	62.52	27.91	77.4	39.4	79.7	37.4	82.7	37.7
Singapore	8	91.99	158.68	32.71	...	...	94.2	63.4	...	...
Stockholm	146	18.31	25.46	11.78	59.7	27.0	91.8	22.0	62.1	25.7
St. Petersburg	16	21.30	29.52	13.75	61.1	17.4	97.0	38.2	63.7	15.2
Tokio	70	59.17	77.10	45.72	73.9	38.9	97.9	15.4	77.7	37.1
Trieste	85	42.94	63.14	26.57	...	...	...	...	...	...
Vienna	663	24.50	33.90	16.50	65.7	30.4	97.7	8.0	67.1	28.
Vladivostok	55	19.54	33.60	9.39	63.9	11.0	95.7	21.8	69.4	6.0
Washington	75	43.80	61.33	18.79	74.7	34.5	104.0	15.0	76.8	32.1
Wellington (N.Z.)	140	49.88	60.40	34.93	60.7	49.3	98.0	30.0	62.4	45.9

## FEDERAL CAPITAL SITE.

Canberra (Dist.)	{ 2,000 to 2,900 }	22.52	40.29	10.45	67.5	41.8	104.0	11.1	68.4	39.7
Queanbeyan	2,900									

## THE STATE CAPITALS.

					*	†				
Perth	197	33.54	46.73	20.48	72.8	55.8	107.9	35.3	74.1	54.9
Adelaide	140	20.62	30.87	13.43	73.1	52.9	116.3	32.0	74.2	51.5
Brisbane	137	47.25	88.26	16.17	76.6	59.5	108.9	36.1	77.2	58.0
Sydney	146	47.95	82.81	23.01	70.9	53.9	108.5	35.9	71.6	52.3
Melbourne	115	25.40	36.42	15.61	66.4	49.9	111.2	27.0	67.5	48.5
Hobart	160	23.38	40.67	13.43	61.3	47.0	105.2	27.7	62.1	45.8

\* Mean of the three hottest months. † Mean of the three coldest months.

17. **Climatological Tables.**—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals. These are given in the following tables:—

## CLIMATOLOGICAL DATA FOR PERTH, W.A.

LAT. 31° 57' S., LONG. 115° 51' E. HEIGHT ABOVE M.S.L. 197 Ft.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32 F. Mm. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. Readings	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds. 9 a.m. & 3 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	26	13	13	13	13	12	13	14	13
January ...	29.910	797 27/98	0.74	11,656	S S E	10.35	1.3	2.6	16.9
February ...	29.926	650 6/08	0.67	10,052	S S E	8.68	1.5	2.8	14.3
March ...	29.922	601 17/99	0.56	10,188	S S E	7.64	1.0	2.8	14.8
April ...	30.073	935 25/00	0.45	8,760	S E	4.79	0.8	2.4	6.0
May ...	30.077	722 22/10	0.37	8,246	N E	2.59	2.3	5.4	4.4
June ...	30.056	851 27/10	0.41	8,460	N N E	1.66	1.9	5.0	4.4
July ...	30.103	949 11/99	0.41	9,052	N N E	1.65	2.6	5.4	6.8
August ...	30.085	966 15/03	0.45	9,052	W S W	2.35	1.6	5.4	7.1
September ...	30.059	864 11/05	0.48	9,080	S S W	3.34	1.9	5.3	6.9
October ...	30.031	686 15/98	0.56	10,199	S S W	5.25	1.1	5.3	7.8
November ...	29.936	777 18/97	0.62	10,380	S S W	7.70	0.9	3.9	12.8
December ...	29.933	672 31/98	0.59	11,284	S	10.01	1.3	3.0	16.8
Year { Totals	—	—	—	—	—	66.01	17.8	—	123.1
Year { Averages	30.020	—	0.53	9,672	S	—	—	4.3	—
Year { Extremes	—	966 15/8/03	—	—	—	—	—	—	—

## TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water mn. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	14	14	14	14	14	14	13	12	—
January ...	84.1	62.9	73.5	107.0 16/97	50.6 25/01	56.4	171.1 4/04	42.4 25/02	—
February ...	84.9	63.3	74.1	106.8 6/98	47.7 1/02	59.1	169.0 4/99	41.2 1/02	—
March ...	81.6	60.7	71.2	104.3 6/7/06	45.8 8/03	58.5	161.6 †	36.7 8/03	—
April ...	75.9	56.8	65.4	99.7 9/10	42.4 2/01	57.3	152.0 11/01	35.0 2/01	—
May ...	68.6	52.5	60.6	90.4 2/07	39.9 *	50.5	138.8 15/02	31.9 18/99	—
June ...	63.6	49.1	56.4	77.1 9/09	36.9 14/98	40.2	131.0 5/04	30.2 14/98	—
July ...	62.5	47.3	54.9	73.8 24/99	36.4 19/06	37.4	131.0 31/98	29.2 29/08	—
August ...	63.9	48.1	56.0	80.4 30/02	35.3 31/08	45.1	134.1 †	29.9 31/08	—
September ...	65.9	50.2	58.0	86.4 28/00	39.0 18/00	47.4	144.8 19/02	33.2 15/99	—
October ...	69.0	52.7	60.8	93.4 17/06	41.2 10/03	52.2	152.6 30/01	33.4 1/10	—
November ...	74.7	56.0	65.3	100.9 27/01	42.0 1/04	58.9	161.5 17/03	35.5 6/10	—
December ...	81.0	60.7	70.8	107.9 20/04	48.0 2/10	59.9	168.3 20/04	39.1 2/10	—
Year { Averages	73.0	55.0	64.0	—	—	—	—	—	—
Year { Extremes	—	—	—	107.9 20/12/04	35.3 31/8/08	72.5	171.1 4/1/04	29.2 29/7/08	—

\* 17 and 18, 1899. † 1/99 and 1/09. ‡ 29/1898 and 18/1902.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.				Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days of Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of days Dew.
No. of yrs. over which observation extends	14	14	14	35	35	35	35	35	—	14
January ...	52	56	45	0.34	3	2.17 1879	nil *	1.74 28/79	—	2.0
February ...	54	63	48	0.32	2	2.30 1883	nil †	0.90 10/83	—	1.8
March ...	55	62	49	0.75	4	4.50 1896	nil ‡	1.53 17/76	—	3.8
April ...	63	70	54	1.64	7	4.97 1882	0.05 §	2.62 30/04	—	8.2
May ...	74	81	63	5.03	14	12.13 1879	0.98 1903	2.80 20/79	—	11.2
June ...	79	83	74	6.66	16	12.11 1890	2.16 1877	2.65 16/00	—	11.4
July ...	79	81	72	6.36	16	10.00 1902	2.42 1876	3.00 4/91	—	12.1
August ...	75	79	68	5.70	17	10.33 1882	0.46 1902	2.79 7/03	—	10.3
September ...	70	76	64	3.33	14	7.72 1903	0.69 1877	1.73 23/09	—	8.2
October ...	64	75	56	2.08	11	7.87 1890	0.49 1892	1.98 15/10	—	5.1
November ...	57	62	52	0.78	6	2.12 1880	nil 1891	1.11 30/03	—	3.9
December ...	52	56	46	0.55	4	3.05 1888	nil 1886	1.72 1/88	—	2.6
Year { Totals	—	—	—	33.54	114	—	—	—	—	80.6
Year { Averages	63	—	—	—	—	12.13 5/79	—	—	—	—
Year { Extremes	—	83	45	—	—	—	nil §	3.00 4/7/91	—	—

\* 1888, 1894, and 1897. † 1885, 1891, 1896, and 1903. ‡ 1877, 1884, and 1886. § 1890 and 1894, § January, February, March, November, and December, various years.

## CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

LAT. 34° 56' S., LONG. 138° 35' E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Gravity from 9 a.m. and 3 p.m. Readings	Wind.				Mean Amount of Evaporation	No. of Days Lightning.	Mean Amount of Clouds. 9 a.m. & 3 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	54	33	33	33	33	41	39	43	29
January ...	29.913	758 19/99	0.37	8,201	S W & S	8.99	2.3	3.5	7.5
February ...	29.952	691 22/96	0.31	6,953	S W & S	7.35	2.0	3.4	7.2
March ...	30.039	592 12/85	0.26	6,903	S W to S E	5.80	2.2	4.0	6.8
April ...	30.117	773 10/96	0.24	6,377	S W & S †	3.41	1.6	5.0	3.7
May ...	30.123	760 9/80	0.21	6,293	N E to N	1.99	1.8	5.7	1.6
June ...	30.096	750 12/78	0.27	6,775	N E to N	1.23	2.2	6.2	1.2
July ...	30.133	674 25/82	0.26	6,897	N E to N	1.29	1.6	5.8	1.2
August ...	30.100	773 31/97	0.29	7,333	N E to N †	1.85	2.2	5.7	1.8
September ...	30.042	720 2/87	0.32	7,469	N E & S W †	2.53	2.4	5.2	2.7
October ...	29.995	768 28/98	0.36	8,161	S W & N E †	4.73	3.5	4.9	3.7
November ...	29.974	677 2/04	0.36	7,836	W S W to S	6.56	4.0	4.5	5.5
December ...	29.920	675 12/91	0.36	8,190	W S W to S	5.41	2.8	3.8	6.9
Year { Totals ...	—	—	—	—	—	54.44	28.6	—	49.8
Averages ...	30.034	—	0.30	7,282	S W	—	—	4.8	—
Extremes ...	—	773 *	—	—	—	—	—	—	—

\* 10/4/96; 31/8/97. † With tendency N E. ‡ With tendency S W. || Equal.

## TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		*Sea water min. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	54	54	54	54	54	54	33	50	37
January ...	86.6	61.7	74.2	116.3 26/58	45.1 21/84	71.2	180.0 18/82	36.5 14/79	70.9
February ...	86.1	61.9	74.0	113.6 12/99	45.4 13/05	67.2	170.5 10/00	36.7 24/78	70.9
March ...	80.9	58.9	69.9	108.0 12/61	44.8 —/57	63.2	174.0 17/83	33.8 27/80	68.2
April ...	73.3	54.6	64.0	98.0 10/66	39.6 15/59	58.4	155.0 1/83	30.3 27/08	64.0
May ...	65.3	50.0	57.7	86.3 5/66	36.9 †	51.4	148.2 12/79	25.9 10/91	59.0
June ...	60.2	46.6	53.4	76.0 23/65	32.5 27/76	43.5	138.8 18/79	24.5 20/79	54.7
July ...	58.6	44.4	51.5	74.0 11/06	32.0 24/08	42.0	134.5 26/90	25.0 17/90	52.2
August ...	61.8	45.8	53.8	82.0 25/62	32.3 17/59	49.7	140.0 31/82	23.5 7/88	53.7
September ...	66.2	47.7	57.0	90.7 23/82	32.7 4/58	58.0	160.5 23/82	26.2 15/08	55.4
October ...	72.5	51.3	61.9	100.5 30/59	35.0 —/57	64.5	153.8 19/82	28.5 7/96	60.7
November ...	78.8	55.3	67.0	113.5 21/65	40.8 2/09	72.7	166.9 20/78	31.5 2/09	65.2
December ...	83.5	58.8	71.1	114.2 14/76	43.0 ‡	71.2	175.7 7/99	32.5 4/84	68.6
Year {	Averages ...	72.8	53.1	62.9	—	—	—	—	62.0
	Extremes ...	—	—	—	116.3 26/1/58	32.0 24/7/08	84.3 180.0	23.5 7/8/88	—

\* Taken at Lighthouse at entrance to Port River. † 26/1895; 24/1904. ‡ 16/1861; 4/1906.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew. Mean No. days Dew
No. of yrs. over which observation extends	43	43	43	54	54	54	54	54	39
January ...	42	59	33	0.81	5	3.28 1870	nil *	2.30 2/89	— 4
February ...	44	56	37	0.57	3	3.10 1858	nil †	1.81 5/90	— 5
March ...	49	58	40	1.15	6	4.60 1878	nil ‡	3.50 5/78	— 10
April ...	56	72	44	1.83	10	5.65 1889	0.09 1888	3.15 5/60	— 13
May ...	70	76	58	2.82	14	7.75 1875	0.20 1891	2.47 5/75	— 15
June ...	78	84	70	3.01	17	6.02 1887	0.42 1886	1.45 25/84	— 15
July ...	78	87	72	2.59	17	5.38 1865	0.36 1899	1.75 10/65	— 17
August ...	72	77	65	2.38	16	5.59 1909	0.68 1860	1.44 31/03	— 16
September ...	63	73	54	1.78	14	3.67 1877	0.45 1896	1.42 25/93	— 15
October ...	54	67	44	1.79	12	3.83 1870	0.31 1888	2.24 16/08	— 12
November ...	48	57	38	1.05	8	2.76 1909	0.04 1885	1.88 28/58	— 7
December ...	43	50	33	0.84	6	3.98 1861	nil 1904	1.32 2/61	— 4
Year { Totals ...	—	—	—	20.62	128	—	—	—	133
Averages ...	56	—	—	—	—	—	—	—	—
Extremes ...	—	87	33	—	—	7.75 5/75	nil §	3.50 5/3/78	—

\* 1878, 1906. † 1860, etc. ‡ 1859, etc. § January, February, March, and December, various years.

## CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

LAT. 27° 28' S., LONG. 153° 2' E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mean Sea Level and Standard Gravity from 9 a.m. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds. 9 a.m. & 3 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	24	—	—	—	24	1	—	24	—
January ...	29.869	—	—	—	E	5.87	—	6.2	—
February ...	29.890	—	—	—	S E	5.22	—	6.2	—
March ...	29.953	—	—	—	S	4.55	—	6.0	—
April ...	30.047	—	—	—	S	3.62	—	5.2	—
May ...	30.095	—	—	—	S	2.62	—	4.2	—
June ...	30.054	—	—	—	S & W	1.89	—	4.3	—
July ...	30.063	—	—	—	S & W	2.57	—	3.5	—
August ...	30.086	—	—	—	S & S W	2.40	—	3.2	—
September ...	30.027	—	—	—	S	3.33	—	3.2	—
October ...	29.995	—	—	—	N & N E	4.87	—	4.5	—
November ...	29.960	—	—	—	N E & E	5.40	—	5.2	—
December ...	29.885	—	—	—	N E & E	6.27	—	5.7	—
Year { Totals	—	—	—	—	—	48.61	—	—	—
Averages	29.993	—	—	—	S'ly to E'ly	—	—	5.0	—
Extremes	—	—	—	—	—	—	—	—	—

## TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water 3 ft. below surface
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	24	24	24	24	24	24	24	24	—
January ...	85.4	68.9	77.2	108.9 14/02	58.8 4/03	50.1	162.7 20/89	49.9 4/03	—
February ...	84.4	68.5	76.4	101.9 11/04	58.7 *	43.2	165.2 6/02	49.3 9/89	—
March ...	82.1	66.5	74.3	96.8 16/88	55.6 30/95	41.2	160.0 1/87	46.0 28/02	—
April ...	78.7	61.5	70.1	95.2 †	48.6 17/00	46.6	150.1 1/08	37.0 17/00	—
May ...	73.4	55.4	64.4	88.8 19/97	41.3 24/96	47.5	147.0 1/05	29.8 8/97	—
June ...	69.1	50.6	59.8	81.5 6/06	36.3 29/08	45.2	133.9 6/06	25.4 23/88	—
July ...	68.1	47.8	58.0	83.4 28/98	36.1 ‡	47.3	134.4 29/89	23.9 11/90	—
August ...	71.2	49.9	60.6	87.5 28/07	37.4 6/87	50.1	140.7 30/88	27.1 9/99	—
September ...	75.6	54.7	65.2	90.2 20/04	40.7 1/96	49.5	155.5 28/03	30.4 1/89	—
October ...	79.9	59.8	69.9	101.4 19/93	43.3 3/99	58.1	156.5 31/89	34.9 8/89	—
November ...	82.6	63.9	73.2	105.4 13/98	48.5 2/05	56.9	162.3 7/89	38.8 1/05	—
December ...	85.2	67.3	76.2	105.9 26/93	57.0 16/90	48.9	159.5 23/89	49.1 3/94	—
Year { Averages	78.0	59.5	68.8	—	—	—	—	—	—
Extremes	—	—	—	108.9 14/1/02	36.1	72.8	165.2 6/2/10	23.9 11/7/90	—

\* 10-11/04. † 9/96 and 5/03. ‡ 12/94 and 2/96. || 12/7/94 and 2/7/96.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	24	24	24	59	51	59	59	—	—
January ...	65	79	53	6.68	14	27.72 1895	0.61 1882	18.31 21/87	—
February ...	69	82	55	6.72	14	40.39 1893	0.77 1904	8.36 16/93	—
March ...	72	85	56	6.15	16	34.04 1870	0.58 1868	11.18 14/08	—
April ...	72	79	60	3.74	13	15.28 1867	0.04 1897	3.93 20/92	—
May ...	75	85	64	3.00	10	13.85 1876	0.00 1846	5.62 9/79	—
June ...	75	92	68	2.59	8	14.03 1873	0.02 1895	6.01 9/93	—
July ...	73	90	67	2.34	8	8.46 1889	0.00 1841	3.54 †	—
August ...	71	80	65	2.37	7	14.67 1879	0.00 *	4.89 12/87	—
September ...	66	76	47	2.10	8	5.43 1886	0.10 1907	2.46 2/94	—
October ...	61	72	52	2.69	10	9.99 1882	0.14 1900	1.95 20/89	—
November ...	59	71	53	3.70	10	10.43 1846	0.00 1842	4.46 16/86	—
December ...	61	67	52	5.17	12	13.97 1910	0.35 1865	6.60 28/71	—
Year { Totals	—	—	—	47.25	130	—	—	—	—
Averages	68	—	—	—	—	—	—	—	—
Extremes	—	85	47	—	—	40.39 2/1893	0.00 †	18.31 21/1/87	—

— signifies no record kept.

\* 1862, 1869, 1880. † 5/1946, 7/1841, 8/1862, 1869, 1880, 11/1842. ‡ 15/76, 16/89.

## CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52' S., LONG. 151° 12' E. HEIGHT ABOVE M.S.L. 146 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 33° F. Mean Sea Level and Standard Gravity from 24 hrly. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles, mean.	Prevailing Direction.				
No. of yrs. over which observation extends	52	44	44	44	52	10	47	49	47
January ...	29.904	731 1/71	0.38	8,322	NE	5.30	4.7	5.9	1.9
February ...	29.948	871 12/69	0.35	7,214	NE	4.22	4.0	6.1	1.2
March ...	30.023	943 20/70	0.26	6,915	NE	3.60	4.0	5.7	1.7
April ...	30.079	803 6/82	0.24	6,396	NE	2.49	4.1	5.1	2.5
May ...	30.068	758 6/98	0.23	6,475	W	1.58	3.5	4.9	3.1
June ...	30.063	712 7/00	0.31	7,329	W	1.26	2.3	4.8	3.3
July ...	30.081	930 17/79	0.29	7,363	W	1.20	2.6	4.3	4.5
August ...	30.076	756 22/72	0.28	7,126	W	1.50	3.5	4.4	4.5
September ...	30.015	964 6/74	0.32	7,345	W	2.50	4.2	4.4	3.5
October ...	29.972	925 4/72	0.35	8,010	NE	3.81	5.0	5.0	2.1
November ...	29.955	720 13/68	0.36	7,833	NE	4.68	5.6	5.6	1.5
December ...	29.867	938 3/84	0.36	5,208	NE	5.28	5.7	5.6	1.8
Year { Totals ...	—	—	—	—	—	37.42	49.3	—	31.3
Year { Averages ...	30.006	—	0.31	7,448	NE	—	—	5.1	—
Year { Extremes ...	—	964 6/9/74	—	—	—	—	—	—	—

## TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water min. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	52	52	52	52	52	52	52	52	50
January ...	78.3	64.9	71.6	108.5 13/96	51.2 14/65	57.3	160.9 13/95	44.2 18/97	71.4
February ...	77.2	64.8	71.0	101.0 19/66	49.3 23/63	51.7	162.1 16/98	43.4 25/91	71.9
March ...	75.4	63.0	69.2	102.6 3/69	48.8 11/86	53.8	172.3 4/89	42.3 13/93	71.0
April ...	70.9	58.2	64.6	89.0 4/05	44.6 27/64	44.4	144.1 10/77	38.0 13/92	68.4
May ...	65.0	52.0	58.5	83.5 1/59	40.2 22/59	43.3	129.7 1/96	30.9 7/88	64.2
June ...	60.4	48.2	54.4	74.7 24/72	38.1 29/62	36.6	123.0 14/78	28.7 30/95	59.9
July ...	58.9	45.6	52.3	74.9 17/71	35.9 12/90	39.0	144.3 15/98	24.0 4/93	57.3
August ...	62.2	47.5	54.9	82.0 31/84	36.8 3/72	45.2	149.0 30/78	27.7 30/95	57.6
September ...	66.3	51.3	58.9	91.1 24/07	40.8 18/64	50.3	142.2 12/78	30.1 17/05	60.0
October ...	71.0	55.8	63.4	99.7 19/98	43.3 2/99	56.4	149.9 13/96	32.7 9/05	63.3
November ...	74.2	59.6	66.9	102.7 21/78	45.8 1/05	56.5	158.5 28/99	38.8 1/05	66.9
December ...	77.2	62.8	70.0	107.5 31/04	49.3 2/59	58.2	171.5 4/88	42.2 8/75	69.6
Year { Averages ...	69.8	56.2	63.0	—	—	—	—	—	65.1
Year { Extremes ...	—	—	—	108.5 13/1/96	35.9 12/7/90	72.6	172.3 4/3/89	24.0 4/7/93	—

\* Taken at Fort Denison.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days of Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	52	52	52	52	52	52	52	52	51
January ...	70	78	60	3.44	14.1	10.49 1883	0.42 1888	3.75 22/63	0.002 1.1
February ...	73	81	60	4.69	14.1	18.56 1873	0.34 1902	8.90 25/73	0.003 1.4
March ...	75	85	63	5.13	15.3	18.70 1870	0.42 1876	5.66 25/90	0.007 2.9
April ...	78	87	64	5.27	13.4	24.49 1861	0.06 1868	7.52 29/60	0.022 6.3
May ...	76	90	66	5.02	15.7	20.87 1889	0.21 1885	8.36 28/89	0.030 7.3
June ...	79	89	68	5.28	12.9	16.30 1885	0.19 1904	5.17 16/84	0.022 5.3
July ...	77	88	66	4.62	12.2	13.21 1900	0.12 1862	5.72 28/08	0.024 6.8
August ...	74	84	64	3.21	11.6	14.89 1889	0.04 1885	5.33 2/60	0.021 5.7
September ...	70	79	60	2.91	12.2	14.05 1879	0.08 1862	5.69 10/79	0.008 3.4
October ...	68	77	55	2.86	12.7	10.81 1902	0.21 1867	6.37 13/02	0.004 1.6
November ...	68	79	54	2.94	12.6	9.88 1865	0.19 1910	4.23 19/00	0.006 2.7
December ...	68	77	53	2.60	12.8	8.47 1910	0.45 1876	4.75 13/10	0.002 1.0
Year { Totals ...	—	—	—	47.95	158.9	—	—	—	0.151 45.5
Year { Averages ...	73	—	—	—	—	—	—	—	—
Year { Extremes ...	—	90	53	—	—	21.49 4/1861	0.04 8/1885	5.90 25/2/73	—

## CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

LAT. 37° 50' S., LONG. 144° 59' E. HEIGHT ABOVE M.S.L. 115 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Sea Level and Standard Gravity from 9 a.m., 3 & 9 p.m. readings	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	53	43	43	43	43	38	—	53	—
January ...	29.912	583 10/97	0.29	7,345	S W, S E	6.32	—	5.1	—
February ...	29.961	566 8/68	0.28	6,441	S W, S E	5.00	—	5.1	—
March ...	30.039	677 9/81	0.22	6,398	S W, S E	5.86	—	5.5	—
April ...	30.101	597 7/68	0.19	5,719	S W, N E	5.24	—	5.9	—
May ...	30.104	693 12/65	0.19	5,958	N W, N E	1.46	—	6.5	—
June ...	30.076	761 13/76	0.24	6,461	N W, N E	1.11	—	6.7	—
July ...	30.097	755 3/74	0.23	6,482	N W, N E	1.05	—	6.3	—
August ...	30.065	637 14/75	0.26	6,882	N W, N E	1.47	—	6.3	—
September ...	30.000	617 11/73	0.29	7,103	N W, N W	2.27	—	6.1	—
October ...	29.964	819 5/66	0.29	7,377	S W, N W	3.25	—	5.9	—
November ...	29.952	734 13/66	0.29	7,083	S W, S E	4.48	—	5.9	—
December ...	29.898	656 1/75	0.30	7,503	S W, S E	5.69	—	5.5	—
Year { Totals	—	—	—	—	—	38.30	—	—	—
Averages	30.014	—	0.26	6,730	S W, N W	—	—	5.9	—
Extremes	—	899 5/10/66	—	—	—	—	—	—	—

## TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water min. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	55	55	55	55	55	55	51	51	—
January ...	73.3	56.6	67.5	111.2 14/62	42.0 28/85	69.2	178.5 14/62	20.2 28/85	—
February ...	77.8	56.6	67.2	109.5 7/01	40.3 9/65	69.2	167.5 15/70	30.9 6/91	—
March ...	74.9	54.5	64.7	105.5 2/93	37.1 17/84	68.4	164.5 1/68	28.9 —	—
April ...	68.5	50.7	59.6	94.0 6/65	34.8 24/88	59.2	152.0 8/61	25.0 23/97	—
May ...	61.5	46.6	54.1	83.7 7/05	31.3 26/95	52.4	142.6 2/59	23.2 21/97	—
June ...	56.8	43.9	50.4	72.2 1/07	28.0 11/66	44.2	129.0 11/61	20.4 17/95	—
July ...	55.4	41.5	48.5	68.4 24/78	27.0 21/69	41.4	125.8 27/80	20.5 12/03	—
August ...	58.7	43.2	50.9	77.0 20/85	28.3 11/63	48.7	137.4 29/69	21.3 14/02	—
September ...	62.5	45.4	53.9	82.3 30/07	31.1 16/08	51.2	142.1 20/67	24.7 13/07	—
October ...	66.9	48.1	57.5	96.1 30/85	32.1 3/71	64.0	154.3 28/68	25.9 3/71	—
November ...	71.5	51.0	61.2	105.7 27/94	36.5 2/96	69.2	159.6 29/65	24.6 2/96	—
December ...	75.4	53.7	64.5	110.7 15/76	40.0 4/70	70.7	170.3 20/69	33.2 1/04	—
Year { Averages	67.3	49.3	58.3	—	—	—	—	—	—
Extremes	—	—	—	111.2 14/1/62	27.0 23/7/69	84.2	178.5 14/1/62	20.4 17/6/95	—

\* 17/1884 and 20/1897.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean 3 a. 3 p.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	53	53	53	55	55	55	55	52	—
January ...	64	73	52	1.88	8	5.68 1904	0.04 1878	2.97 9/97	—
February ...	65	75	53	1.69	7	6.24 1904	0.03 1870	2.14 7/04	—
March ...	67	75	59	2.11	8	6.36 1874	0.18 1859	3.05 15/78	—
April ...	72	83	62	2.34	10	6.71 1901	0.33 1908	4.50 22/86	—
May ...	79	86	69	2.14	12	4.31 1862	0.45 1901	1.85 7/91	—
June ...	80	88	73	2.10	14	4.51 1859	0.73 1877	1.74 21/04	—
July ...	80	88	74	1.85	13	7.02 1891	0.57 1902	2.71 12/91	—
August ...	75	81	65	1.82	14	3.59 1909	0.48 1903	1.87 17/81	—
September ...	72	81	63	2.34	14	5.87 1870	0.52 1907	2.62 12/80	—
October ...	70	79	63	2.66	13	7.61 1869	0.57 1895	3.00 17/69	—
November ...	66	75	53	2.21	10	5.05 1881	0.25 1895	2.57 16/76	—
December ...	64	75	49	2.26	9	7.18 1863	0.11 1904	2.62 28/07	—
Year { Totals	—	—	—	25.40	132	—	—	—	—
Averages	71	—	—	—	—	—	—	—	—
Extremes	—	88	49	—	—	7.61 10/69	0.03 9/70	4.50 22/4/86	—

— signifies no record kept.



## CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 58' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L. 160 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mean Sea Level and Gravity from 9 a.m. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pres- sure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	16	—	27	—	25	—	—	27	—
January ...	29.849	—	0.51	—	S E, N W	—	—	6.3	—
February ...	29.939	—	0.51	—	N W, S E	—	—	5.4	—
March ...	29.965	—	0.51	—	N W, S E	—	—	5.2	—
April ...	29.977	—	0.47	—	N W, S E	—	—	6.5	—
May ...	30.037	—	0.47	—	N W	—	—	6.8	—
June ...	29.976	—	0.43	—	N W	—	—	6.6	—
July ...	29.955	—	0.43	—	N W	—	—	6.6	—
August ...	29.986	—	0.51	—	N W	—	—	6.0	—
September ...	29.572	—	0.63	—	N W, S E	—	—	5.2	—
October ...	29.833	—	0.63	—	N W, S E	—	—	5.2	—
November ...	29.833	—	0.63	—	N W, S E	—	—	5.9	—
December ...	29.793	—	0.63	—	N W, S E	—	—	5.9	—
Year { Totals ...	—	—	—	—	—	—	—	—	—
Averages ...	29.918	—	0.55	—	N W, S E	—	—	6.0	—
Extremes ...	—	—	—	—	—	—	—	—	—

## TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water mn. 3 ft. be- low surface
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	27	27	27	27	27	27	27	23a .	—
January ...	70.9	53.2	62.0	105.0 1/00	40.3 2/06	64.7	160.0 †	30.6 1897	—
February ...	71.1	53.0	62.1	104.4 12/99	39.0 20/87	65.4	165.0 24/98	28.3 1887	—
March ...	68.0	50.6	59.3	97.5 7/91	36.0 31/05	61.5	147.5 1/06	27.5 30/02	—
April ...	63.0	47.8	55.4	82.4 6/88	33.3 24/88	49.1	138.5 12/05	25.0 1886	—
May ...	57.6	43.5	50.6	75.3 3/88	29.2 20/02	46.1	123.0 1889	20.0 19/02	—
June ...	52.8	41.4	47.1	69.2 1/07	29.5 26/02	39.7	122.0 12/94	21.0 6/87	—
July ...	52.1	39.4	45.8	65.4 15/98	27.7 11/95	37.7	118.7 19/96	18.7 16/86	—
August ...	55.0	41.1	48.0	71.5 17/02	30.5 4/97	41.0	129.0 1887	20.1 7/09	—
September ...	58.5	42.9	50.7	79.5 *	31.0 16/97	48.5	134.0 7/94	22.7 1886	—
October ...	62.6	45.3	54.0	86.0 29/07	32.0 12/89	54.0	146.0 1885	23.8 †	—
November ...	66.4	48.2	57.3	98.0 23/88	37.0 †	61.0	151.8 7/09	26.0 1/08	—
December ...	69.0	50.8	59.9	105.2 30/97	38.0 3/06	67.2	156.0 18/05	27.2 1886	—
Year { Averages ...	62.3	46.4	54.4	—	—	77.5	165.0	18.7	—
Extremes ...	—	—	—	105.2 30/12/97	27.7 11/7/95	—	165.0 24/2/98	— 16/7/86	—

\* 30/91 and 17/97. † 24/84, 13/87, 11/85, and 7/00. ‡ 5/86 and 13/05. § 1886 and 1899.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	16	16	16	66	53	66	70	28-	—
January ...	63	72	55	1.85	9	5.91 1893	0.03 1841	2.59 30/05	—
February ...	64	76	51	1.48	8	9.15 1854	0.07 1847	1.60 22/03	—
March ...	68	76	62	1.61	9	7.60 1854	0.02 1843	1.45 1/83	—
April ...	74	84	61	1.81	10	6.50 1909	0.07 1904	5.02 20/09	—
May ...	78	85	68	1.80	12	6.37 1905	0.10 1843	1.62 31/05	—
June ...	82	92	75	2.21	13	8.15 1889	0.22 1852	4.11 14/89	—
July ...	80	88	73	2.13	13	5.98 1849	0.30 1850	1.56 8/94	—
August ...	78	82	70	1.81	13	10.16 1858	0.23 1854	2.28 13/90	—
September ...	74	82	65	2.10	14	7.14 1844	3.39 1847	1.57 24/85	—
October ...	68	75	60	2.18	14	6.67 1906	0.26 1850	2.58 4/06	—
November ...	63	76	53	2.54	12	8.92 1849	0.16 1868	3.70 30/85	—
December ...	59	73	51	1.88	11	9.00 1875	0.11 1842	2.27 27/07	—
Year { Totals ...	—	—	—	23.38	138	—	—	—	—
Averages ...	71	—	—	—	—	—	—	—	—
Extremes ...	—	92	51	—	—	10.16 8/1858	3.02 3/1843	5.02 20/4/09	—

— Signifies no record kept.

## SECTION IV.

## POPULATION.

## § 1. Census of 3rd April, 1911.

1. **Numbers Enumerated.**—As the estimates of population depend on the Census, the recent Census, viz., that of the 3rd April, 1911, is first referred to. The Census for the whole of the Australian Commonwealth was taken as for the night between the 2nd and the 3rd of April, 1911, and was the first Census under the provisions of the Commonwealth Census and Statistics Act 1905, which provides for the enumeration of the whole of Australia being dealt with from one centre instead of each State being responsible for its own count as on previous occasions. The numbers recorded in the several States and Territories of the Commonwealth were as follows:—

**POPULATION OF THE COMMONWEALTH, 3rd APRIL, 1911,  
(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)**

States and Territories.	Males.	Females.	Persons.
<b>States—</b>			
New South Wales ...	857,698	789,036	1,646,734
Victoria ...	655,591	659,960	1,315,551
Queensland ...	329,506	276,307	605,813
South Australia ...	207,358	201,200	408,558
Western Australia ...	161,565	120,549	282,114
Tasmania ...	97,591	93,620	191,211
<b>Territories—</b>			
Northern Territory ...	2,734	576	3,310
Federal Capital Territory ...	992	722	1,714
<b>Total Commonwealth ...</b>	<b>2,313,035</b>	<b>2,141,970</b>	<b>4,455,005</b>

2. **Growth during Last Three Decennia.**—The total increase of population of the Commonwealth between the Census of 31st March, 1901, and that of 3rd April, 1911, was 681,204, of which 335,107 were males and 346,097 were females, as compared with a total increase of 599,409, comprising 273,889 males and 325,520 females, for the preceding ten years. The population of each sex enumerated at the Census of 3rd April, 1881, 5th April, 1891, 31st March, 1901, and 3rd April, 1911, was as follows:—

**POPULATION OF COMMONWEALTH AT LAST FOUR CENSUSES.  
(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)**

Date of Census.	Males.	Females.	Persons.	*Masculinity.
3rd April, 1881 ...	1,214,913	1,035,281	2,250,194	117.35
5th April, 1891 ...	1,704,039	1,470,353	3,174,392	115.89
31st March, 1901 ...	1,977,928	1,795,873	3,773,801	110.14
3rd April, 1911 ...	2,313,035	2,141,970	4,455,005	107.99

\* Number of males per 100 females.

The increases in the populations of the several States during the past three decennia have been as follow :—

### DECENNIAL INCREASES IN THE TOTAL POPULATION.

State.	1881-1891.		1891-1901.		1901-1911.	
	Numerical.	Per cent.	Numerical.	Per cent.	Numerical.	Per cent.
N.S. Wales* ...	374,129	49.90	230,892	20.54	293,602	21.67
Victoria ...	278,274	32.30	61,230	5.37	114,481	9.53
Queensland ...	180,193	84.39	104,411	26.52	107,684	21.62
South Australia ...	39,119	14.15	42,813	13.57	50,212	14.01
West. Australia ...	20,074	67.57	134,342	269.86	97,990	53.22
Tasmania ...	30,962	26.76	25,808	17.60	18,736	10.86
N. Territory ...	1,447	41.93	†— 87	†— 1.78	†— 1,501	†— 31.20
Commonwealth ...	924,198	41.07	599,409	18.88	681,204	18.05

\* Including Federal Capital Territory. † Decrease.

For the Commonwealth as a whole the increase in population during the decennium 1901-11 was greater by 81,795 than that for the decennium 1891-1901. The rate of increase per cent. was, however, not so great, being 18.05 per cent. for 1901-11, as against 18.88 for 1891-1901. The former corresponds to an increase of 1.67 per cent. per annum, the latter to an increase of 1.74 per cent. per annum.

As regards the separate States, the numerical increases in the case of New South Wales, Victoria, Queensland and South Australia were greater for 1901-11 than for 1891-1901. On the other hand, Western Australia and Tasmania experienced greater numerical increases in the earlier than in the later decennium, while the Northern Territory, which exhibited an actual loss of population in both decennia, experienced a much heavier loss in 1901-11 than in 1891-1901. In the matter of rates of increase per cent. New South Wales, Victoria and South Australia were higher in 1901-11 than in 1891-1901, while Queensland, Western Australia and Tasmania were lower, and the rate of decrease in the Northern Territory was much heavier.

## § 2. Special Characteristics of Commonwealth Population.

1. **Sex Distribution.**—In respect of the relative proportions of the sexes in its population, Australia has, since the first settlement of the continent in 1788, differed materially from the older countries of the world. In the latter, the populations have, in general, grown by natural increase, and their composition usually reflects that fact, the numbers of males and females being in most countries approximately equal, with a more or less marked tendency, however, for the females to slightly exceed the males. The excess of females arises from a variety of causes, amongst which may be mentioned—(a) higher rate of mortality amongst males; (b) greater propensity on the part of males to travel; (c) the effects of war; (d) employment of males in the army, navy, and mercantile marine; (e) preponderance of males amongst emigrants. On the other hand, the last-mentioned cause has tended naturally to produce an excess of males in Australia, since the majority of those emigrating to Australia have been males. The circumstances under which the colonisation of Australia was first undertaken, and the remoteness of this country from Europe, have combined to accentuate this feature.

There is little doubt that the continent presented few attractions to the explorers who visited its shores, mainly on the west and north, during the sixteenth, seventeenth, and early part of the eighteenth centuries, and it was only when the Declaration of Independence of the United States, in 1776, closed to the British prison authorities the North American plantations, which had previously been used as receptacles for the deportation of convicts, that the overcrowding of the gaols caused them to consider the advisability of converting the great southern continent into a convict settlement. This idea was put into practice in 1787, when the first consignment left England, arriving in Sydney Cove on 26th January, 1788. Reports concerning the number of persons actually landed are conflicting, but it appears that the total may be set down approximately at 1035, including the military. Details as to the sexes are not available, but the males must have largely preponderated. Indeed, nearly nine years later, on the 31st December, 1796, in a total population of 4100, there were 257 males to every 100 females.

The subsequent progress of Australia resulting from extensive mineral discoveries and the development of its great natural resources, pastoral, agricultural, forestal, etc., have tended to attract male rather than female immigrants, particularly in view of the distance from the principal centres of European population. Even at the Census of 3rd April, 1911, after more than 123 years of settlement, there were 108 males to each 100 females, and this notwithstanding the equalising tendency due to additions to the population by means of births and to deductions therefrom by the deaths of immigrants.

The terms "masculinity" and "femininity" have been used to express the proportion of the sexes in any group, the former indicating the ratio of males to females, the latter the reciprocal of this, viz., the ratio of females to males. The term "masculinity" is that which has been adopted by the Commonwealth Bureau of Census and Statistics, and the masculinity of any group is usually expressed numerically as the number of males to each 100 females. The masculinity of the population of the Commonwealth at intervals of five years from 1800 to 1910 is as follows:—

#### MASCULINITY OF THE COMMONWEALTH POPULATION. 1800 to 1911.

Year.	Number of Males to each 100 Females.	Year.	Number of Males to each 100 Females.	Year.	Number of Males to each 100 Females.
1800	263.05	1840	201.75	1880	117.28
1805	233.35	1845	163.38	1885	118.33
1810	190.53	1850	143.20	1890	116.06
1815	188.84	1855	145.48	1895	113.41
1820	243.71	1860	140.15	1900	110.55
1825	329.77	1865	125.38	1905	108.65
1830	308.30	1870	121.10	1910	107.87
1835	260.71	1875	118.25	Census 1911	107.99

The curious inequalities of the increases in the number of males and in the number of females for the Commonwealth as a whole, and for the individual States respectively, will be seen by referring to the graphs on pages 158 and 159.

The significance of the rates of masculinity shewn in the above table will perhaps be better understood by a comparison with the corresponding information for other countries. This has been made in the next table, which shews, for some of the principal countries of the world for which such particulars are available, the masculinity of the population according to the most recent statistics:—

## MASCULINITY OF THE POPULATION OF VARIOUS COUNTRIES.

Country.	Year.	No. of Males to each 100 Females.	Country.	Year.	No. of Males to each 100 Females.
New Zealand...	1911	111.61	Netherlands	1909	98.48
Australia	1911	107.99	Prussia	1910	97.70
India (Feudatory States)	1901	106.02	German Empire	1910	97.40
Servia	1905	105.87	Russia (European)	1897	97.18
Canada	1901	105.04	France	1901	96.85
United States of America	1900	104.87	Austria	1900	96.65
Rumania	1899	103.30	Sweden	1909	95.67
British India	1901	103.26	Spain	1900	95.36
Japan	1910	102.10	Denmark	1906	94.52
Poland (Russian)	1897	101.42	Norway	1900	94.37
Greece	1907	101.37	Scotland	1911	94.12
Ireland	1911	99.62	England and Wales	1911	93.67
Belgium	1900	98.70	Portugal	1900	91.53

2. **Age Distribution.**—The causes which operated to bring about an excess of males in the population of the Commonwealth have been equally effective in rendering the age distribution essentially different from that of older countries. The majority of the immigrants, whether male or female, were in the prime of life, and as the Australian birth-rate in earlier years was a comparatively high one, the effect produced is a population in which the number of young and middle-aged persons is somewhat above, and the number for advanced ages somewhat below the normal.

Thus in the Commonwealth at the Census of 3rd April, 1911, the age distribution of the population was as shewn in the table hereunder; that for England and Wales for the Census of 1901, the latest available, is given also for the sake of comparison :—

## AGE DISTRIBUTION OF POPULATION.

## COMMONWEALTH AND ENGLAND AND WALES.

Age Group.	Population of COMMONWEALTH, 3rd April, 1911.*	Percentage on Total Population.	Population of ENGLAND and WALES, 31st March, 1901.	Percentage on Total Population.
Under 15	1,414,484	31.75	10,545,739	32.42
15 and under 65	2,848,941	63.95	20,464,351	62.91
65 and upwards	191,580	4.30	1,517,753	4.67
Total	4,455,005	100.00	32,527,843	100.00

\* Preliminary figures, subject to revision.

During the past 50 years, the age distribution of the Australian population has varied considerably, as will be seen from the following table, which gives for each sex the proportion per cent. of the total population in the age groups "under 15," "15 and under 65," and "65 and over." The figures upon which these percentages have been computed are those furnished by the Censuses of the several States and the Commonwealth Census of 1911. Those for 1861 include the results of the Western Australian Census of 1859, while those for 1871 include the results of the Western Australian and Tasmanian Censuses of 1870 :—

## AGE DISTRIBUTION OF COMMONWEALTH POPULATION, 1861 to 1911.

Census Year.	Males.				Females.				Persons.			
	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.
	%	%	%	%	%	%	%	%	%	%	%	%
1861	31.41	67.42	1.17	100	43.03	56.20	0.77	100	36.28	62.72	1.00	100
1871	38.84	59.11	2.05	100	46.02	52.60	1.38	100	42.09	56.17	1.74	100
1881	36.37	60.85	2.78	100	41.89	56.07	2.04	100	38.91	58.65	2.44	100
1891	34.77	62.02	3.21	100	39.36	58.08	2.56	100	36.90	60.20	2.90	100
1901	33.87	61.82	4.31	100	36.50	59.85	3.65	100	35.12	60.88	4.00	100
1911*	30.98	64.66	4.36	100	32.58	63.19	4.23	100	31.75	63.95	4.30	100

\* Preliminary figures, subject to revision.

The excess of males over females, previously referred to, is found mainly in ages of 21 and upwards. In the total population under the age of 21 there were, at the date of the last Census, less than 103 males to each 100 females, while in that aged 21 and upwards there were more than 122 males to each 100 females. In the absence of a large immigration of males in excess of females, therefore, the disparity between the sexes in Australia would soon be eliminated.

3. *Race and Nationality.*—(i.) *Constitution of Australia's Population.* As regards race, the population of the Commonwealth may be conveniently divided into two main groups, one comprising the aboriginal natives of Australia, and the other the various immigrant races which, since the foundation of settlement in 1788, have made the Commonwealth their home. Under the head of "immigrant races" would, of course, be included not only those residents of Australia who had been born in other countries, but also their descendants born in Australia.

(a) *The Aborigines.* It would appear that the aboriginal population of Australia was never large, and that the life led by them was, in many parts of the country, a most precarious one. With the continued advance of settlement the numbers have shrunk to such an extent that in the more densely populated States they are practically negligible. Thus, at the Census of 1911 the number of full-blooded aboriginals who were employed by whites or were living in proximity to settlements of whites was stated to be only 19,939. In some of the States, however, more particularly in Queensland, South Australia, Western Australia, and the Northern Territory, there are, in addition, considerable numbers of natives still in the "savage" state, numerical information concerning whom is of a most unreliable nature, and can be regarded as little more than the result of mere guessing.

Ethnologically interesting as is this remarkable and rapidly-disappearing race, practically all that has been done to increase our knowledge of them, their laws, habits, customs, and languages, has been the result of more or less spasmodic and intermittent effort on the part of enthusiasts either in private life or the public service. An enumeration of them has never been seriously undertaken in connection with any Australian Census, though a record of the numbers who were in the employ of whites, or living in contiguity to the settlements of whites, has on the occasion of the recent Censuses usually been made. As stated above, various guesses at the number of aboriginal natives at present in Australia have been made, and the general opinion appears to have prevailed that 150,000 might be taken as a rough approximation to the total. More recent estimates, however, have given results considerably below this total. Thus, in his report of June, 1908, the Queensland Chief Protector of Aborigines estimates the total at 74,030, distributed as follows:—New South Wales, 6960; Victoria, 270; Queensland, 20,000; South Australia (including the Northern Territory), 19,800; Western Australia, 27,000. A somewhat similar estimate made by Dr. Roth, formerly Chief Protector of Aborigines in Queensland, gives Queensland at least 18,000; Western Australia at least 24,000, and the Northern Territory from

20,000 to 22,000. In view of these figures it would appear that the number of aboriginal natives in Australia may be said to be not more than 100,000. The whole matter, however, is involved in considerable doubt.

The number of aboriginal natives enumerated in the several States and Territories of the Commonwealth at the Census of 1911 was as shewn hereunder, the figures given relating as before stated only to those in a civilised or semi-civilised condition.

#### ABORIGINAL NATIVES ENUMERATED AT CENSUS OF 1911.

Persons, etc.	N.S.W.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tas- mania.	Northern Territory.	Federal Capital Territory	C'wth.
Males ...	1,152	103	5,145	802	3,433	2	743	5	11,385
Females ...	860	93	3,542	637	2,936	1	480	5	8,554
Total	2,012	196	8,687	1,439	6,369	3	1,223	10	19,939
Masculinity 1	133.9	110.8	145.3	125.9	116.9	200.0	154.9	100.0	133.1

1. Number of males per hundred females.

These figures, as noted above, refer only to those natives who were, at the date of the Census, in the employ of whites or were living in contiguity to the settlements of whites.

In the Commonwealth Constitution Act provision is made for aboriginal natives to be excluded for all purposes for which statistics of population are made use of under the Act, but the opinion has been given by the Commonwealth Attorney-General that, "in reckoning the population of the Commonwealth, half-castes are not aboriginal natives within the meaning of section 127 of the Commonwealth of Australia Constitution Act, and should therefore be included." It may be added, however, that as "half-castes," living in the nomadic state, are practically undistinguishable from aborigines, it has not always been found practicable to make the distinction, and further, that no authoritative definition of "half-caste" has yet been given.<sup>1</sup>

(b) *Immigrant Races.* As regards the immigrant races, it may be said that they consist mainly of natives of the three divisions of the United Kingdom and their descendants. The proportion of Australian-born contained in the population of the Commonwealth has in recent years, increased rapidly, and at the Census of 31st March, 1901, out of a total population of 3,765,879 persons whose birthplaces were specified, no fewer than 2,908,303, or 77.23 per cent., were Australian born, while of the remainder, 679,159, or 18.03 per cent., were natives of the United Kingdom, and 25,788, or 0.68 per cent., were natives of New Zealand, that is, 95.94 per cent. of the total population at the date of the Census had been born in either Australasia or the United Kingdom. The other birthplaces most largely represented in the Commonwealth were Germany, 38,352 (1.02 per cent.); China, 29,907 (0.79 per cent.); Scandinavia (comprising Sweden, Norway and Denmark), 16,144 (0.43 per cent.); Polynesia, 10,363 (0.28 per cent.); British India, 7637 (0.20 per cent.); United States of America, 7448 (0.20 per cent.); and Italy, 5678 (0.15 per cent.). The total population of Asiatic birth was 47,014 (1.25 per cent.), of whom 3593 were born in Japan.

At the time of writing, similar particulars for the Census of 1911 are not available, but a summary of the results will be found in the Census Appendix.

1. An article on the Aborigines of Australia, specially written for the Year Book by W. Ramsay Smith, D.Sc., M.B., C.M., F.R.S.E., Permanent Head of the Department of Public Health of South Australia, will be found in Section IV., § 12, page 158, Year Book No. 3.

(c) *Non-European Races.* The Census taken on the 3rd April, 1911, was the first occasion on which a systematic attempt had been made to ascertain the number of persons of non-European races in Australia. On former occasions the inquiry did not usually extend further than a request that in all cases in which the person enumerated was an Aboriginal or a Chinese, whether of the full-blood or of the half-blood, the fact should be specially noted in the column on the Census schedule relating to birthplace. At the recent Census the inquiry as to race was made one of the leading items, and all persons of non-European race were required to have their race specified. From the figures so obtained the following table has been compiled:—

### PERSONS OF NON-EUROPEAN RACE IN THE COMMONWEALTH, 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

States and Territories.	Aust- ralian Half- caste Abori- ginals	Asiatic.		African.		American.		Polynesian.		Indefinite.		Total.	
		Full- blood.	Half- caste	Full- blood	Half- caste	Full- blood	Half- caste	Full- blood	Half- caste	Full- blood	Half- caste	Full- blood.	Half- caste
States—													
N. S. Wales ...	4,512	10,983	1,390	169	166	10	7	343	70	2	...	11,507	6,145
Victoria ...	447	5,972	1,056	58	63	6	9	12	5	1	2	6,049	1,582
Queensland ...	2,508	9,123	940	53	65	37	5	2,123	142	...	...	11,336	3,660
S. Australia ...	692	1,049	175	18	21	5	1	5	4	2	...	1,079	893
W. Australia ...	1,475	5,578	129	48	15	7	2	25	3	...	...	5,658	1,624
Tasmania ...	227	532	127	4	6	...	...	5	2	...	...	541	362
Territories—													
N. Territory ...	244	1,594	35	7	...	...	...	11	1	...	...	1,612	280
Fed. Cap. Ter.	8	7	...	...	...	...	...	...	...	...	...	7	8
<b>Total</b> ...	<b>10,113</b>	<b>34,838</b>	<b>3,852</b>	<b>357</b>	<b>336</b>	<b>65</b>	<b>24</b>	<b>2,524</b>	<b>227</b>	<b>5</b>	<b>2</b>	<b>37,789</b>	<b>14,554</b>

The proportion of population of Non-European race (exclusive of full-blooded aborigines) in each State is shewn in the following table, full-blood and half-caste non-Europeans being shewn separately:—

### PROPORTION OF NON-EUROPEAN RACES

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

States and Territories.	Total Population.	Non-European Races.					
		Full-blood.		Half-caste.		Total.	
		Number.	Number per 1000 of Total Populat'n.	Number.	Number per 1000 of Total Populat'n.	Number.	Number per 1000 of Total Populat'n.
States—							
N. S. Wales	1,646,734	11,507	6.99	6,145	3.73	17,652	10.72
Victoria ...	1,315,551	6,049	4.60	1,582	1.20	7,631	5.80
Queensland ...	605,813	11,336	18.71	3,660	6.04	14,996	24.75
S. Australia ...	408,558	1,079	2.64	893	2.19	1,972	4.83
W. Australia	282,114	5,658	20.05	1,624	5.76	7,282	25.81
Tasmania ...	191,211	541	2.83	362	1.89	903	4.72
Territories—							
N. Territory	3,310	1,612	487.01	280	84.59	1,892	571.60
Fed. Cap. Ter.	1,714	7	4.08	8	4.67	15	8.75
<b>Total C'wealth</b>	<b>4,455,005</b>	<b>37,789</b>	<b>8.48</b>	<b>14,554</b>	<b>3.27</b>	<b>52,343</b>	<b>11.75</b>



(ii.) *Biological and Sociological Significance.* As regards race and nationality, therefore, the population of Australia is fundamentally British, and thus furnishes an example of the transplanting of a race into conditions greatly differing from those in which it had been developed. The biological and sociological significance of this will ultimately appear in the effects on the physical and moral constitution produced by the complete change of climatic and social environment, for the new conditions are likely to considerably modify both the physical characteristics and the social instincts of the constituents of the population. At present the characteristics of the Australian population, whether physical, mental, moral, or social, are only in the making, and probably it will not be possible to point to a distinct Australian type until three or four generations more have passed. Even then it is hardly likely that with the great extent of territory and varying conditions presented by the Commonwealth there will be but one type; on the contrary, a variety of types may be expected. The Australian at present is little other than a transplanted Briton, with the essential characteristics of his British forbears, the desire for freedom from restraint, however, being perhaps more strongly accentuated. The greater opportunity for an open-air existence, and the absence of the restrictions of older civilisations, may be held to be in the main responsible for this.

4. *Differences among the States.*—(i.) *Sex Distribution.* The varying circumstances under which the settlement of the several States has been effected, and the essentially different conditions experienced in the due development of their respective resources, have naturally led to somewhat marked differences in the constitution of their populations. In the matter of sex distribution the States in which the normal condition of older countries is most nearly represented are those of Victoria, South Australia, and Tasmania, in the first-mentioned of which the females have, for some years, exceeded the males. In Western Australia and Queensland, on the other hand, the position of affairs is quite abnormal, the numbers of males to each 100 females being respectively 133 and 119.

The variation in the masculinity of the estimated population of the several States and of the Commonwealth as a whole during the past eleven years will be seen from the following table:—

#### MASCULINITY\* OF THE POPULATION, 31st DECEMBER, 1900 to 1910.

(COMMONWEALTH.)

Year.	Masculinity of the Population on 31st December.						
	N.S.W.	Vict.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
1900 ... ..	111.14	101.23	125.33	104.04	157.54	107.97	110.55
1901 ... ..	110.12	101.16	125.78	102.71	155.69	107.90	110.15
1902 ... ..	110.56	100.07	124.64	100.72	153.55	108.96	109.78
1903 ... ..	110.71	99.20	124.26	99.45	148.04	108.56	109.28
1904 ... ..	110.01	98.29	123.23	100.26	145.01	107.55	109.02
1905 ... ..	111.05	97.69	121.75	101.65	141.35	106.09	108.65
1906 ... ..	111.10	97.07	120.07	103.12	138.23	104.73	108.24
1907 ... ..	111.55	96.61	119.08	102.60	135.08	104.69	107.93
1908 ... ..	110.77	96.76	118.70	103.30	133.47	104.43	107.64
1909 ... ..	109.96	97.68	119.41	103.54	132.33	104.13	107.71
1910 ... ..	109.23	98.71	119.02	104.19	132.90	104.14	107.87

\* Number of males to each 100 females.

(ii.) *Age Distribution.* The disparity in sex distribution exhibited by the several States is accompanied by a corresponding inequality in the matter of age distribution.

The number of persons in each State at the Census of 3rd April, 1911, at what are commonly known as the "dependent," "supporting," and "old" ages, and the proportion of same to total of each State and Commonwealth, were as follows :—

**NUMBER AND PROPORTION OF PERSONS IN THE COMMONWEALTH OF  
DEPENDENT, SUPPORTING, AND OLD AGE, 3rd APRIL, 1911.**

State.	Number of Persons of				Proportion of Population of		
	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).	All ages.	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).
New South Wales* ...	529,465	1,052,068	66,915	1,648,448	32.12	63.92	4.06
Victoria ...	401,256	846,110	68,185	1,315,551	30.50	64.32	5.18
Queensland ...	200,688	382,433	22,692	605,813	33.13	63.13	3.74
South Australia† ...	127,940	264,715	19,213	411,868	31.06	64.27	4.67
Western Australia ...	88,135	187,299	6,680	282,114	31.24	66.39	2.37
Tasmania ...	67,000	116,816	7,895	191,211	35.04	60.83	4.13
Commonwealth ...	1,414,484	2,848,941	191,580	4,455,005	31.75	63.95	4.30

\* Including Federal Capital Territory. † Including the Northern Territory.

Thus in Western Australia a larger proportion of its population was of supporting age than in any other State. In Tasmania the proportion was the lowest. On the other hand, in Tasmania the proportion of dependent age was the highest for the Commonwealth, while the Western Australian proportion was the lowest. Victoria had the highest and Western Australia the lowest proportion of persons aged 65 years and upwards.

(iii.) *Birthplaces.* The following table exhibits, in a very condensed form, the distribution of the population of the several States according to birthplace :—

**BIRTHPLACES AT CENSUS OF 31st MARCH, 1901.  
(COMMONWEALTH.)**

Birthplace.	Total Population of Commonwealth at Census.						
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
Australia ...	1,079,154	940,830	323,436	289,993	126,952	147,938	2,908,303
New Zealand ...	10,589	9,020	1,571	711	2,704	1,193	25,788
United Kingdom	220,401	214,371	126,159	56,862	41,551	19,815	679,159
Other European Countries ...	20,151	16,548	21,174	9,326	6,076	1,398	74,673
Asia ...	14,208	8,793	13,878	4,376	4,810	949	47,014
Africa ...	986	926	378	235	243	101	2,869
America ...	4,813	3,659	1,688	811	1,151	385	12,507
Polynesia ...	1,139	203	8,877	39	78	27	10,363
At Sea ...	1,967	1,564	634	539	317	182	5,203
Unspecified ...	1,438	5,156	334	265	242	487	7,922
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

The proportions for the several States for each of the birthplaces shewn in the foregoing table expressed as percentages of the total population, the birthplaces of which were specified, are as follows:—

### PERCENTAGE OF COMMONWEALTH POPULATION ACCORDING TO BIRTHPLACE,

31ST MARCH, 1901.

Birthplace.	Percentage of Total Population.						
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	%	%	%	%	%	%	%
Australia ...	79.74	78.67	64.97	79.91	69.04	86.02	77.23
New Zealand ...	0.78	0.75	0.32	0.20	1.47	0.69	0.68
United Kingdom ...	16.28	17.93	25.34	15.67	22.60	11.52	18.03
Other European Countries ...	1.49	1.38	4.25	2.57	3.30	0.81	1.98
Asia ...	1.05	0.74	2.79	1.21	2.62	0.55	1.25
Africa ...	0.07	0.08	0.08	0.06	0.13	0.06	0.08
America ...	0.36	0.30	0.34	0.22	0.63	0.22	0.33
Polynesia ...	0.08	0.02	1.78	0.01	0.04	0.02	0.28
At Sea ...	0.15	0.13	0.13	0.15	0.17	0.11	0.14
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

As regards distribution according to birthplace, the population of New South Wales is very similar to that of Victoria, the proportions born in Australia and Asia being slightly higher, and that born in the United Kingdom slightly lower, in the case of New South Wales. There is also a rough similarity between the population distributions of Queensland and Western Australia. In both, the Australian-born represent a much smaller, and those born in the United Kingdom, in "Other European Countries" and in Asia, a much larger proportion than is the case with the remaining States. Polynesians were, however, much more numerously represented in Queensland at the date of the Census than in any other State, but this position has been considerably modified by the subsequent deportation of Kanakas. Natives of New Zealand were, proportionately, most numerous in Western Australia. Tasmania had the largest proportion of Australian-born population, viz., 86 per cent., while Queensland, with 65 per cent., had the smallest. On the other hand, more than 25 per cent. of Queensland's population consisted of natives of the United Kingdom, while only 11½ per cent. of the population of Tasmania had been born there. For the Commonwealth as a whole 98 per cent. of the population were from Australasian or European birthplaces.

### § 3. Commonwealth Population—Its Distribution and Fluctuation.

1. **Present Population.**—The estimated population of the several States of the Commonwealth at the end of each of the last eleven years is as shewn in the following table. These estimates have, since the last issue of the Year Book, been amended on the basis of the results disclosed by the Census of 3rd April, 1911.

## POPULATION OF COMMONWEALTH, on 31st DECEMBER, 1900 to 1910.

Year.	*New South Wales.	Victoria.	Queens-land.	† South Australia.	Western Australia.	Tasmania.	Commonwealth.
MALES.							
1900 ...	716,047	601,773	274,684	184,637	110,088	89,763	1,976,992
1901 ...	720,840	608,436	282,291	184,439	117,885	90,945	2,004,886
1902 ...	736,142	604,318	284,215	181,392	128,370	93,571	2,028,008
1903 ...	748,821	599,950	286,871	180,138	134,140	95,224	2,045,144
1904 ...	765,713	597,617	289,785	182,023	141,694	95,951	2,072,783
1905 ...	782,897	598,134	291,807	184,835	146,498	95,947	2,100,118
1906 ...	800,820	600,856	294,063	188,051	148,061	94,879	2,126,730
1907 ...	823,413	605,775	296,670	191,118	146,264	96,973	2,160,213
1908 ...	832,419	614,937	302,370	197,866	148,447	97,942	2,193,981
1909 ...	845,228	631,021	314,481	201,646	151,325	98,514	2,242,215
1910 ...	858,181	646,482	325,513	209,295	157,971	98,866	2,296,308

## FEMALES.

1900 ...	644,258	594,440	219,163	177,470	69,879	83,137	1,788,347
1901 ...	654,615	601,464	224,430	179,564	75,716	84,288	1,820,077
1902 ...	665,801	603,913	228,025	180,089	83,603	85,879	1,847,310
1903 ...	676,362	604,792	230,857	181,129	90,608	87,700	1,871,448
1904 ...	689,745	607,991	235,150	181,551	97,714	89,216	1,901,367
1905 ...	704,987	612,287	239,675	181,832	103,640	90,438	1,932,859
1906 ...	720,798	618,976	244,910	182,366	107,112	90,593	1,964,755
1907 ...	738,159	627,032	249,135	186,282	108,276	92,625	2,001,509
1908 ...	751,504	635,512	254,729	191,537	111,224	93,791	2,038,297
1909 ...	768,671	646,001	263,364	194,754	114,350	94,605	2,081,745
1910 ...	785,674	654,926	273,503	200,874	118,861	94,937	2,128,775

## TOTAL.

1900 ...	1,360,305	1,196,213	493,847	362,107	179,967	172,900	3,765,339
1901 ...	1,375,455	1,209,900	506,721	364,003	193,601	175,233	3,824,913
1902 ...	1,401,943	1,208,231	512,240	361,481	211,973	179,450	3,875,318
1903 ...	1,425,183	1,204,742	517,728	361,267	224,748	182,924	3,916,592
1904 ...	1,455,458	1,205,608	524,935	363,574	239,408	185,167	3,974,150
1905 ...	1,487,884	1,210,421	531,482	366,667	250,138	186,385	4,032,977
1906 ...	1,521,618	1,219,832	538,973	370,417	255,173	185,472	4,091,485
1907 ...	1,561,572	1,232,807	545,805	377,400	254,540	189,598	4,161,722
1908 ...	1,583,923	1,250,449	557,099	389,403	259,671	191,733	4,232,278
1909 ...	1,613,899	1,277,022	577,845	396,400	265,675	193,119	4,323,960
1910 ...	1,643,855	1,301,408	599,016	410,169	276,832	193,803	4,425,083

\* Including the Federal Capital Territory. † Including the Northern Territory.

2. *Growth of Population.*—(i.) 1788 to 1824. From 1788, when settlement first took place in Australia, until December 1825, when Van Diemen's Land became a separate colony, the whole of the British Possessions in Australia were regarded as one colony, viz., that of New South Wales. The population during this period increased very slowly, and at the end of 1824 had reached only 48,072.

The population with which settlement in Australia was inaugurated, and that at the end of each year until 1824, are as follows:—

## POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1788 to 1824.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1788 <sup>1</sup>	...	...	1,035	1806	5,389	2,521	7,910
1788	...	...	859	1807	5,939	2,855	8,794
1789	...	...	645	1808	6,822	3,441	10,263
1790	...	...	2,056	1809	7,618	3,942	11,560
1791	...	...	2,873	1810	7,585	3,981	11,566
1792	...	...	3,264	1811	7,697	4,178	11,875
1793	...	...	3,514	1812	8,132	4,498	12,630
1794	...	...	3,579	1813	9,102	4,855	13,957
1795	...	...	3,466	1814	9,295	4,791	14,086
1796	2,953	1,147	4,100	1815	9,848	5,215	15,063
1797	3,160	1,184	4,344	1816	11,690	5,863	17,553
1798	3,367	1,221	4,588	1817	14,178	7,014	21,192
1799	3,804	1,284	5,088	1818	17,286	8,573	25,859
1800	3,780	1,437	5,217	1819	21,366	10,106	31,472
1801	4,372	1,573	5,945	1820	23,784	9,759	33,543
1802	5,208	1,806	7,014	1821	26,179	9,313	35,492
1803	5,185	2,053	7,238	1822	27,915	9,449	37,364
1804	5,313	2,285	7,598	1823	30,206	10,426	40,632
1805	5,395	2,312	7,707	1824	36,871	11,201	48,072

1. On 26th January.

(ii.) *1825 to 1858.* The period extending from 1825 to 1859 witnessed the birth of the colonies of Tasmania (then known as Van Diemen's Land), Western Australia, South Australia, Victoria, and Queensland. The years in which these came into existence as separate colonies were as follows:—Tasmania, 1825; Western Australia, 1829; South Australia, 1834; Victoria, 1851; Queensland, 1859.

The estimated population of the Commonwealth during each year of this transition period is as follows:—

## POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1825 to 1858.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1825	40,288	12,217	52,505	1842	153,758	87,226	240,984
1826	41,289	12,593	53,882	1843	158,846	92,002	250,848
1827	43,053	13,247	56,300	1844	165,034	99,253	264,287
1828	44,778	13,419	58,197	1845	173,159	105,989	279,148
1829	46,946	14,988	61,934	1846	181,342	111,907	293,249
1830	52,885	17,154	70,039	1847	190,265	118,532	308,797
1831	57,037	18,944	75,981	1848	201,612	130,716	332,328
1832	62,254	21,683	83,937	1849	221,978	151,384	373,362
1833	71,669	26,426	98,095	1850	238,683	166,673	405,356
1834	76,259	29,297	105,556	1851	256,975	180,690	437,665
1835	81,929	31,425	113,354	1852	304,126	209,670	513,796
1836	89,417	35,703	125,120	1853	358,203	242,789	600,992
1837	94,881	39,607	134,488	1854	414,337	280,580	694,917
1838	105,271	46,597	151,868	1855	470,118	323,142	793,260
1839	115,480	54,459	169,939	1856	522,144	354,585	876,729
1840	127,306	63,102	190,408	1857	574,800	395,487	970,287
1841	144,114	76,854	220,968	1858	624,380	426,448	1,050,828

(iii.) *1859 to 1910.* From 1859, the year in which Queensland came into existence as a separate colony, until the beginning of 1901, when the Commonwealth of Australia was inaugurated under the provisions of the Commonwealth Constitution Act, Australia consisted of six States, practically independent of each other in all matters of government. During this period, the population of the Commonwealth increased from 1,050,828 at the end of 1858 to 3,765,339 on the 31st December, 1900. The particulars for this period are given in the table hereunder.

During the ten years that have elapsed since the federation of the States was effected the population of the Commonwealth has increased by 659,744, from 3,765,339 on 31st December, 1900, to 4,425,083 on 31st December, 1910. See table hereunder:—

**POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1859 to 1910.**

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1859	644,376	452,929	1,097,305	1885	1,460,394	1,234,124	2,694,518
1860	668,560	477,025	1,145,585	1886	1,510,954	1,277,096	2,788,050
1861	669,373	498,776	1,168,149	1887	1,559,118	1,322,244	2,881,362
1862	683,650	523,268	1,206,918	1888	1,610,548	1,371,129	2,981,677
1863	704,259	555,033	1,259,292	1889	1,649,094	1,413,383	3,062,477
1864	740,433	584,750	1,325,183	1890	1,692,831	1,458,524	3,151,355
1865	773,278	616,765	1,390,043	1891	1,736,617	1,504,368	3,240,985
1866	800,648	643,307	1,443,955	1892	1,766,772	1,538,981	3,305,753
1867	819,127	664,721	1,483,848	1893	1,791,815	1,570,080	3,361,895
1868	849,272	690,280	1,539,552	1894	1,824,217	1,602,543	3,426,760
1869	875,139	717,018	1,592,157	1895	1,855,539	1,636,082	3,491,621
1870	902,494	745,262	1,647,756	1896	1,887,174	1,665,924	3,553,098
1871	928,918	771,970	1,700,888	1897	1,917,460	1,700,323	3,617,783
1872	947,422	795,425	1,742,847	1898	1,937,629	1,727,086	3,664,715
1873	972,907	821,613	1,794,520	1899	1,959,074	1,756,914	3,715,988
1874	1,001,096	848,296	1,849,392	1900	1,976,992	1,788,347	3,765,339
1875	1,028,489	869,734	1,898,223	1901	2,004,836	1,820,077	3,824,913
1876	1,061,477	897,202	1,958,679	1902	2,028,008	1,847,310	3,875,318
1877	1,102,340	928,790	2,031,130	1903	2,045,144	1,871,448	3,916,592
1878	1,132,573	959,591	2,092,164	1904	2,072,783	1,901,367	3,974,150
1879	1,168,781	993,562	2,162,343	1905	2,100,118	1,932,859	4,032,977
1880	1,204,514	1,027,017	2,231,531	1906	2,126,730	1,964,755	4,091,485
1881	1,247,059	1,059,677	2,306,736	1907	2,160,213	2,001,509	4,161,722
1882	1,289,892	1,098,190	2,388,082	1908	2,193,981	2,038,297	4,232,278
1883	1,357,423	1,148,313	2,505,736	1909	2,242,215	2,081,745	4,323,960
1884	1,411,996	1,193,729	2,605,725	1910	2,296,308	2,128,775	4,425,083

It will be seen from the foregoing tables that the population of Australia attained its first million in 1858, seventy years after settlement was first effected; its second million nineteen years later, in 1877; its third million twelve years later, in 1889; and its fourth million sixteen years later, in 1905.

The growth of the total population of the Commonwealth generally, and of each State therein, is graphically shewn on page 157, and of each sex considered separately on pages 158 and 159.

**3. Variations in Masculinity.**—In the second issue of this publication, on pages 163 to 165, an extended table was published shewing the masculinity of the population of each of the States for each year from 1796 to 1907. The following table gives similar particulars for every fifth year from 1800 to 1910. The graphs corresponding to these figures will be found on page 163:—

## MASCULINITY OF COMMONWEALTH POPULATION, 1800 to 1910.

Year.	N.S.W.*	Victoria.	Queensland.	South Aust.†	West Aust.	Tasmania.	C'wealth.
1800	263.05	...	...	...	...	...	263.05
1805	233.35	...	...	...	...	...	233.35
1810	190.53	...	...	...	...	...	190.53
1815	188.84	...	...	...	...	...	188.84
1820	243.71	...	...	...	...	...	243.71
1825	325.51	...	...	...	...	341.71	329.77
1830	317.18	...	...	...	297.29	293.44	308.30
1835	268.40	...	...	...	190.26	251.68	260.71
1840	204.16	...	...	130.10	163.51	229.53	201.75
1845	153.33	...	...	132.75	150.22	215.62	163.37
1850	138.47	...	...	129.15	154.81	179.49	143.20
1855	125.08	187.40	...	100.62	193.55	123.65	145.48
1860	131.29	158.85	149.63	105.06	166.93	123.61	140.15
1865	120.08	129.60	158.47	109.11	173.90	116.42	125.38
1870	120.48	121.59	150.31	105.85	161.17	112.98	121.10
1875	119.09	114.46	152.61	107.24	148.61	111.45	118.25
1880	120.45	110.42	142.50	114.33	135.06	111.70	117.28
1885	121.95	110.61	143.95	110.58	135.47	110.73	118.33
1890	118.05	110.65	132.21	108.60	146.85	111.88	116.06
1895	113.78	105.23	128.15	105.05	226.54	108.16	113.41
1900	111.14	101.23	125.33	104.04	157.54	107.97	110.55
1905	111.05	97.69	121.75	101.65	141.35	106.09	108.65
1910	109.23	98.71	119.02	104.19	132.90	104.14	107.87

\* Including the Federal Capital Territory. † Including the Northern Territory.

#### § 4. Influences affecting Growth and Distribution of Population.

1. **Mineral Discoveries.**—The discovery of gold in Australia in 1851 was undoubtedly one of the most influential factors in bringing about a rapid settlement of the country. Its effect may be gauged by a comparison of the increase during the ten years preceding, with that during the ten years succeeding the discovery. From 31st December, 1840, to 31st December, 1850, the increase was only 214,948 (viz., from 190,408 to 405,356). The rush of people to the newly-discovered goldfields during the succeeding decennium caused an increase of no less than 740,229, the population advancing to 1,145,585 on 31st December, 1860. In 1861, owing to the opening up in that year of the New Zealand goldfields, a rush of population from Australia set in, the result being that the net increase of population of the Commonwealth, which in 1855 amounted to 98,343, and even in 1860 was as much as 48,280, fell in 1861 to 22,564. In fact, during the year 1861 the departures from Australia exceeded the arrivals by 5958, the gain of 22,564 being due to the births exceeding the deaths by 28,522.

In more recent years the gold discoveries of Western Australia in 1886 and subsequent years, led to such extensive migration to that State, that its population, which on 31st December, 1885, amounted to only 35,959, increased in 25 years by no less than 240,873, totalling 276,832 on 31st December, 1910. In this case, however, the additions to the population of the western State were largely drawn from those of the eastern States, so that the actual gain of population to the Commonwealth was but slight.

2. **Pastoral Development.**—Very early in the colonisation of Australia it was recognised that many portions were well adapted for pastoral pursuits, and pastoral developments have led to a considerable distribution of population in various directions. As the numbers engaged in connection therewith, compared with the value of the interests involved, are relatively small, and as pastoral occupancy tends to segregation rather than aggregation of population, the growth of the pastoral industry is but slightly reflected in the population statistics of the Commonwealth.

**3. Agricultural Expansion.**—At the present time the area annually devoted to crops in the Commonwealth is nearly 12 millions of acres. Although considerable in itself, this area, viewed in relation to the total area of the Commonwealth, is relatively small, and represents only about  $\frac{1}{5}$  per cent. of the total area. Per head of population of the Commonwealth the area under crop, however, is  $2\frac{3}{4}$  acres, a fairly high amount when allowance is made for the recency of Australian settlement. About 80 per cent. of the area under crop is devoted to the production of wheat and hay, which require for their profitable production in Australia a considerable area in the one holding. Thus on the whole the agricultural districts of Australia are somewhat sparsely populated, though in a less marked degree than is the case in the pastoral areas.

**4. Progress of Manufacturing Industries.**—One direct effect of the development of manufacturing industries is the concentration of population in places offering the greatest facilities for the production of the particular commodities. In Australia, where manufacturing industries are as yet in their infancy, the tendency throughout has been to concentrate the manufacturing establishments in each metropolis. This has accentuated the growth of the capital cities, which growth, when compared with that of the rest of the country, appears somewhat abnormal.

**5. Influence of Droughts.**—The droughts, which at times so seriously affect the agricultural and pastoral prospects of Australia, have a marked influence on the distribution of population. Districts, which in favourable seasons were fairly populous, have, in times of drought, temporarily become more or less depopulated until the return of better conditions. This movement, however, ordinarily affects only the internal distribution of the population and not the total, but severe drought may even make its influence felt in the statistics of the total population of Australia. Thus in the case of the drought of 1902-3, the departures from the Commonwealth exceeded the arrivals for the two years 1903 and 1904 by 12,859. It may be noted also, that for the former of these years, the natural increase of population by excess of births over deaths was abnormally low, being only 51,150, as compared with 54,698 in the preceding and 60,541 in the succeeding year. As the solution of the problem of dealing with droughts is advanced, their influence will be less marked.

**6. Other Influences.**—(i.) *Commercial Crises.* The effect on population of a commercial crisis, such as that which occurred in Australia in the early years of the final decade of the last century, is clearly indicated on comparing the migration statistics of the Commonwealth for the five years 1887-91 with those for the five years 1892-96. During the former period, the arrivals in the Commonwealth exceeded the departures by no less than 146,872. In the latter period, the corresponding excess amounted to only 2064.

(ii.) *South African War.* The war in South Africa has apparently also left its impress on the population statistics of the Commonwealth, the departures during 1899 and 1900 exceeding the arrivals for the same period by no less than 10,546.

A reference to the graphs of population on pages 157 to 162 will illustrate the preceding observations.

## § 5. Elements of Growth of Population.

**1. Natural Increase.**—The two factors which contribute to the growth of a population are the "natural increase" by excess of births over deaths, and the "net immigration," i.e., the excess of arrivals over departures. While the relative potency of these factors depends upon a variety of causes, it may be said that, in general, in the case of a new country, "net immigration" occupies an important position as a source of increase of population, while in an old country "natural increase," modified more or less by "net emigration," or excess of departures over arrivals, is the only element causing growth of population. The table hereunder gives the total natural increase, as well as that of males and females:—



**NATURAL INCREASE<sup>1</sup> OF THE POPULATION**  
OF STATES AND COMMONWEALTH, FROM 1861 TO 1910.

MALES.

Period.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1861 to 65 ...	22,055	34,286	2,444	9,645	765	3,761	72,956
1866 to 70 ...	25,850	34,997	5,739	10,881	754	3,281	81,502
1871 to 75 ...	30,067	35,132	6,704	9,979	710	3,077	85,669
1876 to 80 ...	34,040	31,985	7,960	13,676	1,023	3,472	92,156
1881 to 85 ...	42,658	33,614	7,986	16,969	1,002	5,284	107,513
1886 to 90 ...	54,753	39,528	17,872	16,519	1,755	6,093	136,520
1891 to 95 ...	56,834	45,606	20,525	15,758	1,436	6,889	147,048
1896 to 1900 ...	48,692	33,645	17,724	12,562	3,402	6,373	122,398
1901 to 1905 ...	51,179	34,332	16,628	11,926	8,283	7,955	130,303
1906 to 1910 ...	64,127	38,948	21,415	14,236	10,762	8,703	153,191
1861 to 1910 ...	430,255	362,073	124,997	132,151	29,892	54,888	1,134,256

FEMALES.

1861 to 65 ...	26,343	39,615	3,566	9,987	1,105	4,415	85,031
1866 to 70 ...	30,327	40,919	7,571	11,223	1,301	4,451	95,792
1871 to 75 ...	35,567	41,472	9,706	10,944	1,255	4,192	103,136
1876 to 80 ...	40,276	37,551	12,291	14,608	1,585	4,699	111,010
1881 to 85 ...	50,204	39,833	15,262	18,033	1,738	6,364	131,434
1886 to 90 ...	62,090	48,131	24,238	17,320	2,609	7,228	161,616
1891 to 95 ...	63,930	53,190	25,757	16,792	3,376	7,781	170,826
1896 to 1900 ...	57,107	40,474	24,037	13,443	7,054	6,718	148,833
1901 to 1905 ...	59,163	39,831	22,910	12,729	11,468	8,027	154,128
1906 to 1910 ...	71,297	42,629	26,048	14,787	13,354	8,522	176,637
1861 to 1910 ...	496,304	423,645	171,386	139,866	44,845	62,397	1,338,443

EXCESS OF NATURAL INCREASE OF FEMALES OVER THAT OF MALES, 1861-1910.

Number ...	66,049	61,572	46,389	7,715	14,953	7,509	204,187
Percentage on Male Increase ...	15.35%	17.00%	37.11%	5.84%	50.02%	13.68%	18.00%

PERSONS.

Period.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1861 to 65 ...	48,398	73,901	6,010	19,632	1,870	8,176	157,987
1866 to 70 ...	56,177	75,916	13,310	22,104	2,055	7,732	177,294
1871 to 75 ...	65,634	76,604	16,410	20,923	1,965	7,269	188,805
1876 to 80 ...	74,316	69,536	20,251	28,284	2,608	8,171	203,166
1881 to 85 ...	92,862	73,447	23,248	35,002	2,740	11,648	238,947
1886 to 90 ...	116,843	87,659	42,110	33,839	4,364	13,321	298,136
1891 to 95 ...	120,764	98,796	46,282	32,550	4,812	14,670	317,874
1896 to 1900 ...	105,799	74,119	41,761	26,005	10,456	13,091	271,231
1901 to 1905 ...	110,342	74,163	39,538	24,655	19,751	15,982	284,431
1906 to 1910 ...	135,424	81,577	47,463	29,023	24,116	17,225	334,828
1861 to 1910 ...	926,559	785,718	296,383	272,017	74,737	117,285	2,472,699

1. Excess of Births over Deaths.

With a single exception, viz., Tasmania, for the period 1906 to 1910, the natural increase of females exceeded that of males throughout the 50 years referred to in the foregoing table. This excess, for the total period 1861 to 1910, is shewn in the table both in

absolute numbers and as percentages of the male increase. The quinquennial period in which the largest natural increase of population took place was that of 1906-10 with a total for the Commonwealth of 334,828. For the individual States the quinquennia of maximum natural increase were as follows:—New South Wales, Queensland, Western Australia and Tasmania, 1906-10; Victoria, 1891-5, and South Australia, 1881-5.

2. **Comparison with other Countries.**—Notwithstanding its comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is a very low one. The following table furnishes a comparison between the average rates of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of the Commonwealth and the Dominion of New Zealand:—

**NATURAL INCREASE PER 1000 OF MEAN POPULATION (VARIOUS COUNTRIES).**

Country.	Increase.	Country.	Increase.	Country.	Increase.
Australasia (1906-10)		Europe— <i>continued.</i>		Europe— <i>continued.</i>	
Western Australia	18.52	Denmark ...	14.23	Belgium ...	*9.41
Tasmania ...	18.37	Rumania ...	14.18	Spain ...	9.02
New South Wales	17.25	German Empire	*14.16	Ireland ...	6.13
New Zealand ...	17.24	Servia ...	14.04	France ...	0.53
Queensland ...	16.99	Finland ...	13.29	Asia (1905-9)—	
Commonwealth	15.93	Norway ...	12.49	Japan...	*10.45
South Australia...	15.17	England & Wales	11.58	Ceylon ...	6.42
Victoria ...	13.11	Scotland ...	11.40	America (1905-9)—	
Europe (1905-9)—		Austria ...	*11.04	Jamaica ...	13.34
Bulgaria ...	*20.36	Sweden ...	11.00	Canada (Province	
Netherlands ...	15.31	Italy ...	10.85	of Ontario) ...	*9.43
Prussia ...	14.91	Hungary ...	10.69	Chile ...	6.14
		Switzerland ...	*10.14		

\* 1904-8.

The graphs of natural increase for each of the States, as well as for the Commonwealth, are shewn on page 162.

3. **Net Immigration.**—The other factor of increase in the population, viz., the excess of arrivals over departures, known as "net immigration," is, from its nature, much more subject to marked and extensive variation than is the factor of "natural increase." These variations are due to numerous causes, many of which have already been referred to in dealing with the influences which affect the growth of population. An important cause not yet referred to, is that of assisted immigration. The number of persons so introduced varies considerably in different years.

**NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES**

(STATES AND COMMONWEALTH), FROM 1861 TO 1910 INCLUSIVE.

Period.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
MALES.							
1861 to 65 ...	2,984	—15,871	34,031	10,270	3,213	—2,865	31,762
1866 to 70 ...	23,381	—13,516	10,190	—242	1,182	—313	47,714
1871 to 75 ...	20,346	—8,093	26,236	3,833	—80	—1,916	40,326
1876 to 80 ...	48,378	—5,696	13,892	25,056	—179	2,418	83,869
1881 to 85 ...	70,996	19,925	54,867	—1,982	2,701	1,860	148,367
1886 to 90 ...	29,345	51,894	18,514	—12,895	6,411	2,648	95,917
1891 to 95 ...	8,671	—33,192	5,088	—1,493	39,443	—2,857	15,660
1896 to 1900...	—854	—39,805	8,095	—8,239	36,953	2,905	945
1901 to 1905...	15,671	—37,971	495	—11,728	28,127	—1,771	7,177
1906 to 1910...	11,157	9,400	12,291	10,224	711	—5,784	37,999
1861 to 1910...	230,075	—45,893	183,699	12,804	118,482	—5,675	493,492

NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES  
(STATES AND COMMONWEALTH), FROM 1861 TO 1910 INCLUSIVE—Continued.

Period.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
FEMALES.							
1861 to 65 ...	8,578	21,527	18,824	5,993	952	— 1,165	54,709
1866 to 70 ...	9,928	16,702	4,851	1,207	517	— 500	32,705
1871 to 75 ...	9,395	2,498	11,187	774	— 18	— 2,500	21,336
1876 to 80 ...	25,081	— 169	7,792	12,977	130	462	46,273
1881 to 85 ...	38,867	7,861	27,526	— 100	957	562	75,673
1886 to 90 ...	23,220	34,337	14,811	— 11,310	1,768	— 42	62,784
1891 to 95 ...	12,793	— 13,656	— 422	1,964	7,758	— 1,705	6,732
1896 to 1900...	— 143	— 23,777	927	— 7,627	32,043	2,009	3,432
1901 to 1905...	1,566	— 21,984	— 2,398	— 8,367	22,293	— 726	— 9,616
1906 to 1910...	9,390	10	7,780	4,255	1,867	— 4,023	19,279
1861 to 1910...	138,675	23,349	90,878	— 234	68,267	— 7,628	313,307
PERSONS.							
1861 to 65 ...	11,562	5,656	52,855	16,263	4,165	— 4,030	86,471
1866 to 70 ...	33,309	30,218	15,041	965	1,699	— 813	80,419
1871 to 75 ...	29,741	— 5,595	37,423	4,607	— 98	— 4,416	61,662
1876 to 80 ...	73,459	— 5,865	21,684	38,033	— 49	— 2,880	130,142
1881 to 85 ...	109,863	27,786	82,393	— 2,082	3,658	2,422	224,040
1886 to 90 ...	52,565	86,231	33,325	— 24,205	8,179	2,606	158,701
1891 to 95 ...	21,464	— 46,848	4,666	471	47,201	— 4,562	22,392
1896 to 1900...	— 997	— 63,582	9,022	— 15,866	68,996	4,914	2,487
1901 to 1905...	17,237	— 59,955	— 1,903	— 20,095	50,420	— 2,497	— 16,793
1906 to 1910...	20,547	9,410	20,071	14,479	2,578	— 9,807	57,278
1861 to 1910...	368,750	— 22,544	274,577	12,570	186,749	— 13,303	806 799

Throughout the minus sign (—) signifies that the number of departures was in excess of arrivals.

During the period 1861-1910, viz., 50 years, the gain to the Commonwealth population by excess of arrivals over departures was 806,799 persons, while the gain by excess of births over deaths for the same period was 2,472,699. That is, nearly 25 per cent. of the increase for the Commonwealth during the past 50 years has been due to "net immigration" and about 75 per cent. to "natural increase." In regard to the contribution of individual States to the total net immigration of 806,799, it may be said that for two, viz., Victoria and Tasmania, the departures for the period in question actually exceeded the arrivals, viz., by 22,544 in the case of the former, and 13,303 in that of the latter, while in South Australia the total gain for the period was only 12,570. In New South Wales, Queensland, and Western Australia, on the other hand, the additions due to net immigration during the 50 years were respectively 368,750, 274,577, and 186,749.

The quinquennial period in which the greatest net immigration to the Commonwealth occurred was that of 1881-5 with a total of 224,040, whilst in the period 1901 to 1905, the departures exceeded the arrivals by 16,793. The quinquennial periods in which maximum net immigration occurred in the several States were as follows:—New South Wales and Queensland 1881-5, Victoria 1886-90, South Australia 1876-80, Western Australia and Tasmania 1896-1900. In all the States quinquennial periods have occurred in which the departures for the five years have exceeded the arrivals. The periods in which such net emigration from the several States was greatest were as follows:—New South Wales and Victoria 1896-1900, Queensland 1901-5, South Australia 1886-90, Western Australia 1871-5 and Tasmania 1906-10.

The graphs shewing net increase, both for the Commonwealth as a whole and for each of the States, will be found on pages 160 and 161.

4. **Total Increase.**—(i.) *Rates for various Countries.* The table hereunder furnishes particulars concerning rates of increase in population for the Commonwealth, its component States, and other countries:—

**RATES OF INCREASE IN POPULATION, 1881 to 1911 (VARIOUS COUNTRIES).**

Countries.	Mean Annual Rate of Increase in Population during period—					
	1881 to 1886.	1886 to 1891.	1891 to 1896.	1896 to 1901.	1901 to 1906.	1906 to 1911.
	%	%	%	%	%	%
<b>AUSTRALASIA—</b>						
Commonwealth ...	3.86	3.06	1.86	1.49	1.39	2.03
New South Wales ...	4.83	3.23	1.99	1.57	2.01	1.91
Victoria ...	2.60	3.12	0.37	0.52	0.16	1.82
Queensland ...	8.42	3.80	2.49	2.25	1.36	2.81
South Australia ...	1.41	1.15	1.63	0.77	0.33	2.43
Western Australia ...	6.13	5.54	20.81	7.25	6.24	2.44
Tasmania ...	2.18	2.87	1.06	1.83	1.29	0.61
New Zealand ...	3.31	1.47	2.41	1.98	2.83	2.56
<b>EUROPE—</b>						
England and Wales ...	1.11	1.11	1.15	1.15	1.01	1.01
Scotland ...	0.75	0.75	1.06	1.06	0.60	0.60
Ireland ...	—0.95	—0.94	—0.60	—0.43	—0.26	—0.03
Austria ...	0.73	0.83	0.79	1.05	0.96	*0.99
Belgium ...	1.13	0.75	1.15	0.92	1.26	†0.97
Denmark ...	1.05	0.87	0.99	1.32	1.10	†1.59
Finland ...	1.42	1.51	1.20	1.41	1.31	†1.39
France ...	0.34	0.06	0.09	0.24	0.15	0.01
German Empire ...	0.74	1.09	1.17	1.51	1.46	*1.39
Hungary ...	1.09	1.01	0.92	1.03	1.01	†1.06
Italy ...	0.66	0.71	0.68	0.61	0.65	†0.86
Netherlands ...	1.32	1.03	1.28	1.30	1.53	†1.34
Norway ...	0.36	0.54	0.96	1.31	0.54	†0.65
Prussia ...	0.79	1.15	1.29	1.59	1.57	†1.47
Rumania ...	1.77	1.34	1.15	1.41	1.46	†1.40
Servia ...	2.30	2.08	1.37	1.57	1.52	†1.36
Spain ...	0.54	0.48	0.45	0.45	0.86	†0.78
Sweden ...	0.57	0.40	0.61	0.86	0.61	†0.85
Switzerland ...	0.38	0.40	1.22	1.10	0.96	*0.90
<b>ASIA—</b>						
Ceylon ...	0.54	1.35	1.41	2.03	2.07	†0.73
Japan ...	0.96	1.12	0.96	1.25	1.29	†0.99
<b>AMERICA—</b>						
Canada ...	1.10	1.08	0.97	1.19	2.80	2.80
Chile ...	2.97	0.72	2.66	0.90	0.26	†1.46
Jamaica ...	0.77	1.37	1.66	1.72	1.63	†1.16
United States... ..	2.27	2.15	1.93	2.02	1.66	†1.69

— Decrease. \* 1906 to 1908. † 1906 to 1909.

(ii.) *Variations in the Commonwealth Rate.* During the thirty years 1881-1911, the annual rate of increase in the population of the Commonwealth has exhibited a marked decline, falling from an average of 3.86 per cent. for the five years 1881-6 to an average of 1.39 for 1901-6. During the succeeding quinquennium, however, an improvement took place, the rate of increase being 2.03 per cent. As regards the separate States of the Commonwealth, the rates of increase in all cases except that of South Australia were lower, and in most instances considerably lower, for the period 1906-11 than for 1881-6.

(iii) *Comparison of Rates of Increase.* It may be noted that the highest rates of increase for the latest available period shewn in the above table are those for Canada,

New Zealand and Australia in the order named. The United States and Denmark rank next in order.

5. **Density of Population.**—From one aspect population may be less significant in respect of its absolute amount than in respect of the density of its distribution. The Commonwealth of Australia, with an area of 2,974,581 square miles, and a population on 3rd April, 1911, of 4,555,005 including aboriginals, has a density of only 1.53 persons to the square mile, and is, therefore, the most sparsely populated of the civilised countries of the world. For the other continents the densities are approximately as follows:—Europe, 116; Asia, 56; Africa, 12; and America, 11. The population of the Commonwealth has thus about 14 per cent. of the density of that of America, about 13 per cent. of that of Africa, about 2½ per cent. of that of Asia, and about 1½ per cent. of that of Europe.

Particulars concerning the number and density of the population of the various countries of the world for the latest dates for which such information is available are given in the following table. These figures have in the main been derived from the 1911 issue of the "Statesman's Year Book," and in some instances, more particularly in the case of Africa, must be considered as rough approximations only, complete data not being obtainable:—

#### NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD.

Country.	Population.		Country.	Population.	
	Number.	*Density		Number.	*Density
<b>Continents—</b>			<b>Asia—</b>		
Europe ... ..	447,888,801	116.02	China & Dependencies ...	433,553,000	101.36
Asia ... ..	958,101,255	56.33	British India ... ..	244,267,542	222.50
Africa ... ..	133,420,727	11.94	Feudatory Indian States ...	70,864,995	104.94
North & Central America and the West Indies ...	126,533,176	14.82	Japan & Dependencies ...	54,331,814	310.90
South America ... ..	49,132,213	6.63	Dutch East Indies ... ..	37,600,000	64.32
Australasia & Polynesia ...	7,195,964	2.08	Russia in Asia ... ..	24,082,200	3.70
			Turkey in Asia ... ..	17,736,900	25.57
			Korea ... ..	12,959,981	150.70
			Persia ... ..	9,500,000	15.13
			Philippine Islands ... ..	7,635,426	59.72
			Siam ... ..	6,250,000	32.05
			Tonking ... ..	5,896,510	127.08
			Annam ... ..	5,513,681	105.83
			Nepal ... ..	5,000,000	92.59
			Afghanistan ... ..	4,750,000	19.00
			Ceylon ... ..	4,056,002	160.11
			Cochin China ... ..	2,870,514	143.53
			Arabia (Independent) ...	2,000,000	2.07
			Cambodia ... ..	1,193,534	26.65
			Bokhara ... ..	1,250,000	15.02
			Federated Malay States ...	969,440	33.66
			Khiva ... ..	800,000	33.33
			Borneo and Sarawak ... ..	686,000	8.25
			Laos ... ..	663,727	6.63
			Straits Settlements ... ..	636,961	398.09
			Oman ... ..	500,000	6.10
			Goa ... ..	475,513	323.70
			Hong Kong & Territory ...	428,888	1,099.71
			Timor, etc. ... ..	300,000	40.93
			French India ... ..	268,647	1,370.65
			Cyprus ... ..	261,587	72.99
			Bhutan ... ..	250,000	12.50
			Wei-hai-wei ... ..	150,000	526.32
			Babrein Islands ... ..	90,000	360.00
			Macao, etc. ... ..	63,991	15,997.75
			Damao and Diu ... ..	56,285	333.05
			Aden & Dependencies ...	41,222	4.58
			Kiauchau ... ..	34,484	172.42
			Brunei ... ..	25,000	8.33
			Tientsin ... ..	17,000	944.44
			Sokotra & Kuria Muria Is.	12,000	8.68
			Labuan ... ..	8,411	280.37
<b>Total ... ..</b>	<b>1,722,322,136</b>	<b>33.47</b>	<b>Total ... ..</b>	<b>958,101,255</b>	<b>56.33</b>
<b>Europe—</b>					
Russia (including Poland and Ciscaucasia & Finland)	136,013,000	64.08			
German Empire ... ..	64,903,423	310.87			
Austria - Hungary (incl. Bosnia & Herzegovina)	51,314,271	196.58			
United Kingdom ... ..	45,216,665	372.49			
France ... ..	39,376,000	190.17			
Italy ... ..	34,565,198	312.36			
Spain ... ..	19,503,068	100.13			
Belgium ... ..	7,451,903	655.23			
Rumania ... ..	6,865,739	135.37			
Turkey (including Crete)	6,440,385	93.73			
Netherlands ... ..	5,898,429	466.35			
Portugal ... ..	5,668,954	159.73			
Sweden ... ..	5,476,441	31.68			
Bulgaria & E. Roumelia	4,284,844	112.52			
Switzerland ... ..	3,741,971	234.22			
Denmark (incl. Iceland)	2,683,738	48.50			
Greece ... ..	2,606,000	106.58			
Servia ... ..	2,650,898	142.14			
Norway ... ..	2,392,698	19.28			
Montenegro ... ..	250,000	68.87			
Luxemburg ... ..	246,455	246.95			
Malta ... ..	215,879	1,845.12			
Monaco ... ..	19,121	2,390.13			
Gibraltar ... ..	18,351	9,175.50			
San Marino ... ..	10,489	276.03			
Liechtenstein ... ..	9,650	148.46			
Andorra ... ..	5,231	29.89			

\* Number of persons per square mile.

NUMBER AND DESTINY OF THE POPULATION OF THE VARIOUS  
COUNTRIES OF THE WORLD.—Continued.

Country.	Population.		Country.	Population.	
	Number.	*Density		Number.	*Density
<b>Africa—</b>					
Belgian Congo ...	20,000,000	21.99	Porto Rico ...	1,118,012	310.04
Turkish Dependencies			Salvador ...	1,116,253	154.50
(incl. Egypt & Sudan)	14,502,978	8.29	Jamaica ...	852,422	205.34
German East Africa ...	10,003,756	26.02	San Domingo ...	610,000	93.80
French Congo ...	10,000,000	14.95	Nicaragua ...	600,000	12.20
Northern Nigeria Prot.	7,161,751	27.94	Honduras ...	500,136	10.81
Southern Nigeria & Prot.	6,500,000	84.13	Windward Islands ...	377,941	562.41
Algeria ...	5,231,850	15.23	Costa Rica ...	368,780	20.04
Senegambia and Niger ...	5,058,000	72.26	Trinidad and Tobago ...	351,313	188.07
Morocco ...	5,000,000	22.83	Newfoundl'd & Labrador	238,614	1.47
Abyssinia ...	5,000,000	11.56	Guadeloupe and Depend.	182,024	477.75
Angola ...	4,119,000	8.50	Martinique ...	102,506	146.23
British East Africa Prot.	4,038,000	22.24	Leeward Islands ...	97,431	0.16
Uganda Protectorate ...	3,520,560	15.75	Alaska ...	61,277	11.24
Portuguese East Africa	3,120,000	10.63	Bahamas ...	52,874	131.20
Kamerun ...	3,000,000	15.70	Curaçao ...	44,156	5.14
Madagascar & adjacent			British Honduras ...	30,527	221.21
Islands ...	2,965,508	13.01	Danish West Indies ...	17,535	876.75
Cape Colony ...	2,507,500	9.95	Bermudas ...	11,893	0.25
Tunis ...	1,885,000	37.70	Greenland ...	5,297	31.28
Liberia ...	1,800,000	45.00	Turks & Caicos Islands ...	4,768	51.27
Rhodesia ...	1,621,950	3.69	St. Pierre & Miquelon ...		
Gold Coast and Protect.	1,500,000	12.58			
French Guinea ...	1,498,000	15.77	Total ...	126,533,176	14.82
Transvaal and Swaziland	1,355,442	11.52			
Natal ...	1,249,034	35.31	<b>South America—</b>		
Sierra Leone and Protect.	1,076,665	35.89	Brazil ...	21,531,100	6.54
Togoland ...	1,000,370	29.68	Argentine Republic ...	6,805,684	5.99
Nyasaland Protectorate	923,022	23.20	Peru ...	4,500,000	6.47
Ivory Coast ...	899,000	6.84	Colombia ...	4,303,000	9.89
Portuguese Guinea ...	820,000	58.82	Chile ...	3,302,204	11.29
French Sahara ...	800,000	0.53	Venezuela ...	2,685,606	6.82
Dahomey ...	749,000	11.52	Bolivia ...	2,049,083	3.38
Orange Free State ...	748,815	9.50	Ecuador ...	1,400,000	12.07
Eritrea ...	450,000	9.83	Uruguay ...	1,094,688	15.16
Italian Somaliland ...	400,000	2.87	Paraguay ...	631,347	3.69
Mauretius and Depend.	377,024	451.52	Panama ...	450,000	14.29
Masutoland ...	348,626	33.87	British Guiana ...	305,090	3.38
Senegal ...	394,000	5.32	Dutch Guiana ...	82,739	1.80
British Somaliland ...	300,000	4.41	French Guiana ...	39,349	1.29
Mauretania ...	223,000	0.65	Falkland Islands and		
French Somali Coast, etc.	208,000	35.92	South Georgia ...	2,323	0.31
Rio Muni & C. San Juan...	200,000	16.67			
Zanzibar ...	197,130	19.33	Total ...	49,182,213	6.63
Reunion ...	177,677	184.12			
Gambia & Protectorate	152,000	33.78	<b>Australasia &amp; Polynesia—</b>		
Cape Verde Islands ...	147,424	99.61	C'wealth of Australia ...	† 4,555,005	1.53
Bechuanaland Protect...	137,200	0.50	New Zealand ...	† 1,008,407	9.63
German S. W. Africa ...	120,000	0.37	Papua ...	351,603	3.88
Comoro Islands... *	86,000	138.71	Kaiser Wilhelm Land &		
Prince's & St. Thomas Is.	42,103	116.95	Bismarck Archipelago ...	299,290	3.32
Fernando Po, etc. ...	22,844	29.29	Dutch New Guinea ...	200,000	1.32
Seychelles ...	22,400	140.06	Hawaii ...	191,909	29.76
Rio de Oro and Adrar ...	12,000	0.16	Solomon Islands (British)	150,310	12.53
Spanish N. & W. Africa	10,412	800.92	Fiji ...	133,831	18.00
Mayotte ...	9,989	71.35	New Caledonia & Depend.	62,486	7.31
St. Helena ...	3,558	75.70	German Solomon Is., etc.	56,000	10.85
Ascension ...	130	3.82	New Hebrides ...	50,000	10.00
Total ...	133,420,727	11.94	Samoa (German) ...	34,480	34.48
<b>North &amp; Central America</b>			French Estab. in Oceania	30,563	20.11
& West Indies—			Gilbert Islands ...	29,475	177.56
United States ...	91,272,266	30.69	Tonga ...	22,997	58.97
Mexico ...	15,063,207	19.64	Guam ...	11,973	59.86
Canada ...	7,081,869	1.90	Samoa (American) ...	6,668	84.41
Cuba ...	2,150,112	48.87	Norfolk Island ...	967	96.70
Haiti ...	2,029,700	198.91			
Guatemala ...	1,992,000	41.25	Total ...	7,195,964	2.08

\* Number of persons per square mile.

† Inclusive of an allowance of 100,000 for Aboriginal Natives. ‡ Inclusive of Maoris and population of Cook and other Pacific Islands.

## § 6. Seasonal Variations of Population.

1. **Natural Increase.**—For the Commonwealth as a whole the natural increase of the population is greatest in the quarter ending 30th September, and least in that ending 31st March. The birth rate is usually at its highest, and the death rate at its lowest, in the September quarter, and *vice versa* in the March quarter. The average natural increase in population of the several States for each of the quarters, based upon the experience of the ten years 1901 to 1910, is given in the following table, from which it will be seen that the quarter in which the rate of natural increase is highest is that ended 30th June for Victoria and Queensland, that ended 30th September for New South Wales and Western Australia, that ended 31st December for Tasmania, while for South Australia the rate for the quarters ending 30th June and 30th September was almost identical. The rate of natural increase is lowest in the quarter ended 31st March in all the States except Western Australia, in which the lowest rate occurs in the quarter ended 31st December.

### AVERAGE QUARTERLY NATURAL INCREASE, STATES AND COMMONWEALTH, 1901 to 1910.

State.	* Average Natural Increase for Quarter ended on last day of—								Average Natural Increase per annum, 1901-10.	
	March.		June.		September.		December.			
	Persons	%o	Persons	%o	Persons	%o	Persons	%o	Persons	%o
New S'th Wales	5,811	3.93	6,167	4.15	6,376	4.27	6,101	4.06	24,455	16.54
Victoria ...	3,611	2.96	4,110	3.36	4,067	3.32	3,785	3.09	15,573	12.75
Queensland ...	1,965	3.70	2,313	4.31	2,313	4.30	2,110	3.90	8,701	16.40
South Australia	1,208	3.25	1,444	3.89	1,459	3.93	1,263	3.39	5,374	14.47
W. Australia ...	1,011	4.33	1,051	4.59	1,302	5.42	988	4.07	4,352	18.64
Tasmania ...	767	4.16	807	4.40	838	4.57	908	4.97	3,320	18.03
Commonwealth	14,373	3.57	15,892	3.94	16,355	4.04	15,155	3.73	61,775	15.37

\* The symbol ‰ denotes "per thousand."

2. **Net Immigration.**—For the Commonwealth as a whole the excess of arrivals over departures for the years 1901 to 1910 was greatest in the December quarter, while in the March quarter the average excess of departures over arrivals was 1660. In New South Wales the September quarter gives the greatest excess of arrivals over departures. In Western Australia the largest excess is in the June quarter. In South Australia and Tasmania the arrivals largely exceeded the departures in the December quarter, but in all the other quarters the departures were in excess. In Queensland, the December quarter showed an excess of departures over arrivals. Victoria shows an excess of departures for every quarter, except that ended 31st December. Particulars concerning the average net immigration of the several States are as follows:—

### AVERAGE QUARTERLY NET IMMIGRATION, STATES AND COMMONWEALTH, 1901 to 1910.

State.	Quarter ended on last day of—								Average Net Immigration per annum, 1901-10.	
	March.		June.		September.		December.			
	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo
N.S.W.	896	0.61	657	0.44	2,420	1.62	— 195	—0.13	3,778	2.56
Victoria	—2,380	—1.95	—3,451	—2.82	— 791	—0.65	1,668	1.36	—4,954	—4.06
Q'land	298	0.56	3,073	5.73	461	0.86	—1,847	—3.41	1,985	3.74
S. Aust.	—1,062	—2.86	—1,536	—4.14	— 291	—0.78	2,346	6.30	— 543	—1.46
W. Aust.	2,019	8.65	2,512	10.97	1,475	6.14	— 626	—2.58	5,380	23.04
Tas.	—1,431	—7.76	—1,975	—10.77	— 307	—1.67	2,604	14.25	—1,109	—6.02
C'wealth	—1,660	—0.41	— 720	—0.18	2,967	0.73	3,950	0.97	4,537	1.13

Throughout, the minus sign (—) denotes that the departures were in excess of arrivals, and ‰ denotes per thousand of population.

## § 7. Urban Population.

1. **The Metropolitan Towns.**—A feature of the distribution of population in Australia is the tendency to accumulate in the capital cities. To such an extent is this metropolitan aggregation carried, that in every State the population of the capital far outnumbers that of any other town therein, and ranges between 21 and 46 per cent. of the entire population of the State. The estimated populations of the several capitals on 3rd April, 1911, and the percentages of such populations on the totals for the respective States, are shewn in the table hereunder. That this metropolitan concentration is phenomenal, may be readily seen by comparing the percentage on the total population with the similar figures for the principal countries of Europe, also given in the table hereunder:—

### METROPOLITAN POPULATION.

(VARIOUS COUNTRIES.)

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
				%
New South Wales ...	Sydney ...	3rd April, 1911.	629,500	38.19
Victoria ...	Melbourne ...		589,000	44.82
Queensland ...	Brisbane ...		139,500	23.03
South Australia ...	Adelaide ...		189,700	46.06
Western Australia ...	Perth ...		106,800	37.86
Tasmania ...	Hobart ...		39,900	20.87
Commonwealth ...	(6 Cities) ...		1,694,400	38.05
New Zealand ...	Wellington ...		70,700	7.01
Denmark ...	Copenhagen ...	1906	514,134	19.73
England ...	London* ...	1911	4,522,961	12.54
Saxony ...	Dresdeh ...	1910	546,882	11.39
Norway ...	Christiania ...	1910	243,801	10.19
Ireland ...	Dublin ...	1910	402,928	9.20
Belgium ...	Brussels ...	1909	649,846	8.72
Bavaria ...	Munich ...	1910	595,053	8.65
France ...	Paris ...	1911	2,846,986	7.23
Austria ...	Vienna ...	1910	2,030,850	7.11
Scotland ...	Edinburgh ...	1911	320,315	6.73
Portugal ...	Lisbon ...	1900	356,009	6.56
Greece ...	Athens ...	1907	167,479	6.36
Sweden ...	Stockholm ...	1909	341,816	6.24
Prussia ...	Berlin ...	1910	2,070,695	5.16
Netherlands ...	The Hague ...	1909	270,109	4.58
Hungary ...	Budapest ...	1900	732,222	3.51
Spain ...	Madrid ...	1910	571,539	2.93
Switzerland ...	Berne ...	1910	85,264	2.28
Italy ...	Rome ...	1909	575,000	1.66
Russia (European) ...	St. Petersburg ...	1908	1,870,000	1.61

\*Population of Greater London 1911, 7,252,963.

2. **Urban Population Generally.**—In connection with the particulars shewing the tendency in Australia to concentrate population in the metropolis, it should be borne in mind that in most of the European States the capital is but one of many populous cities, and in some instances is by no means the most populous. In Australia, on the other hand, the metropolis is in every instance the most populous city, and, in some of the States, is also the only town of considerable magnitude. It will be seen from the table on the next page, that there are in all, only seventeen towns in the Commonwealth having a population upwards of 20,000. Of these six are in New South Wales, four in Victoria, two in Queensland, one in South Australia, two in Western Australia, and two in Tasmania.



In the following table are given the estimated populations of the principal Australian towns as at the date of the recent Census, 3rd April, 1911. In all cases the populations given for the towns include those of contiguous suburban areas, and comprise the area contained within a circle of two, five or ten mile radius of the principal post office.

The figures for Metropolitan towns are also inserted, but will be seen to differ slightly in some instances from those given in the table on page 138, the reason being that the figures given below relate to the population within a circle of 10 mile radius of the G.P.O., whilst, except in the case of Melbourne and Brisbane, this 10 mile circle does not exactly constitute the accepted Metropolitan area.

## POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH, 3rd APRIL, 1911.

Town.	Radius.	State in which Situated.	Approx. Population.	Town.	Radius.	State in which Situated.	Approx. Population.
<b>100,000 and upwards—</b>				<b>5000 and under 10,000.</b>			
Sydney ... ..	10	N.S.W.	632,624	<i>cont.—</i>			
Melbourne ... ..	10	Vic.	588,971	Colac ... ..	5	Vic.	5,678
Adelaide ... ..	10	S.A.	189,982	Echuca ... ..	5	V.N.S.W.	5,554
Brisbane ... ..	10	Qld.	139,480	Mildura ... ..	5	V.N.S.W.	5,547
Perth ... ..	10	W.A.	104,635	Ararat ... ..	5	Vic.	5,489
<b>20,000 and under</b>				Dubbo ... ..	5	N.S.W.	5,389
<b>100,000—</b>				Wellington ... ..	5	N.S.W.	5,372
Newcastle ... ..	10	N.S.W.	62,406	Queensstown ... ..	5	Tas.	5,292
Ballarat ... ..	10	Vic.	52,551	Shepparton ... ..	5	Vic.	5,174
Bendigo ... ..	10	Vic.	43,623	Singleton ... ..	5	N.S.W.	5,162
Hobart ... ..	10	Tas.	41,757	<b>3000 and under 5000</b>			
Parramatta* ... ..	5	N.S.W.	34,568	Stawell ... ..	5	Vic.	4,910
Maitland West ... ..	10	N.S.W.	33,787	Cowra ... ..	5	N.S.W.	4,865
Geelong ... ..	10	Vic.	33,518	Forbes ... ..	5	N.S.W.	4,844
Broken Hill ... ..	10	N.S.W.	31,386	Beechworth ... ..	5	Vic.	4,842
Kalgoorlie ... ..	10	W.A.	31,324	Devonport ... ..	5	Tas.	4,755
Launceston ... ..	10	Tas.	25,227	Young ... ..	5	N.S.W.	4,755
Rockhampton ... ..	10	Qld.	20,915	Mudgee ... ..	5	N.S.W.	4,732
Bull ... ..	10	N.S.W.	20,573	Kyneton ... ..	5	Vic.	4,695
<b>10,000 and under</b>				Bairnsdale ... ..	5	Vic.	4,669
<b>20,000—</b>				Sale ... ..	5	Vic.	4,543
Toowoomba ... ..	5	Qld.	19,776	Dandenong ... ..	5	Vic.	4,490
Ipswich ... ..	5	Qld.	18,574	Casino ... ..	5	N.S.W.	4,374
Charter Towers ... ..	5	Qld.	17,298	Bunbury ... ..	5	W.A.	4,372
Townsville ... ..	10	Qld.	13,835	Wangaratta ... ..	5	Vic.	4,345
Goulburn ... ..	10	N.S.W.	13,429	Murwillumbah ... ..	5	N.S.W.Q	4,335
Kadina ... ..	10	S.A.	13,348	Zeehan ... ..	5	Tas.	4,149
Gympie ... ..	10	Qld.	12,419	Northam ... ..	5	W.A.	4,064
Mount Morgan ... ..	10	Qld.	12,023	Camperdown ... ..	5	Vic.	4,003
Bathurst ... ..	10	N.S.W.	11,972	Gosford ... ..	5	N.S.W.	3,966
Maryborough ... ..	10	Qld.	11,626	Gunnedah ... ..	5	N.S.W.	3,959
Port Pirie ... ..	10	S.A.	11,307	Narrabri ... ..	5	N.S.W.	3,941
Bundaberg ... ..	5	Qld.	10,132	Bangalow ... ..	5	N.S.W.	3,905
<b>5000 and under 10,000</b>				Corowa ... ..	5	N.S.W.V.	3,884
Grafton ... ..	10	N.S.W.	9,527	Horsham ... ..	5	Vic.	3,834
Warrnambool ... ..	5	Vic.	9,287	Bowral ... ..	5	N.S.W.	3,809
Katoomba ... ..	10	N.S.W.	9,242	Parkes ... ..	5	N.S.W.	3,772
Cessnock ... ..	5	N.S.W.	9,000	Albany ... ..	5	W.A.	3,747
Lismore ... ..	5	N.S.W.	8,912	Burnie ... ..	5	Tas.	3,672
Lithgow ... ..	5	N.S.W.	8,851	Ulverstone ... ..	5	Tas.	3,603
Albury ... ..	5	N.S.W.V.	8,816	Geraldton ... ..	5	W.A.	3,594
Orange ... ..	5	N.S.W.	8,800	Kempsey West ... ..	5	N.S.W.	3,532
Tamworth ... ..	5	N.S.W.	8,224	Angaston ... ..	5	S.A.	3,526
Maryborough ... ..	5	Vic.	7,967	Maldon ... ..	5	Vic.	3,433
Castlemaine ... ..	5	Vic.	7,865	Cootamundra ... ..	5	N.S.W.	3,393
Liverpool ... ..	5	N.S.W.	7,529	Temora ... ..	5	N.S.W.	3,383
Wagga Wagga ... ..	5	N.S.W.	7,222	Maclean ... ..	5	N.S.W.	3,328
Wahroonga ... ..	2	N.S.W.	6,768	Benalla ... ..	5	Vic.	3,327
Armidale ... ..	5	N.S.W.	6,704	Taree ... ..	5	N.S.W.	3,321
Mt. Gambier ... ..	5	S.A.	6,670	Laidley ... ..	5	Qld.	3,239
Cairns ... ..	5	Qld.	6,524	Nowra ... ..	5	N.S.W.	3,209
Cobar ... ..	5	N.S.W.	6,186	Quirindi ... ..	5	N.S.W.	3,167
Hamilton ... ..	5	Vic.	6,015	Deniliquin ... ..	5	N.S.W.	3,151
Warwick ... ..	5	Qld.	5,987	Beaconsfield ... ..	5	Tas.	3,111
Mackay ... ..	5	Qld.	5,905	Terang ... ..	5	Vic.	3,099
Inverell ... ..	5	N.S.W.	5,788	Wyalong ... ..	5	N.S.W.	3,047
Gawler ... ..	5	S.A.	5,767	Murrumburrah ... ..	5	N.S.W.	3,029
				June ... ..	5	N.S.W.	3,000

\* Exclusive of a portion of the Parramatta 5 mile circle lying within the Sydney 10 mile circle.

### § 8. Assisted Immigration.

In the earlier days of settlement in Australia, State-assisted immigration played an important part. Such assistance practically ceased in South Australia in 1886, in Tasmania in 1891, and for the time being, in Victoria in 1873. In New South Wales general State-aided immigration was discontinued in the year 1887, but those who arrived under that system and were still residing in New South Wales might, under special regulations, send for their wives and families. A certain amount of passage money, graduated according to the age of the immigrant, was required to be paid in each case. Under the provisions of these regulations, immigrants to the number of 1994 received State assistance during the years 1888 to 1899 inclusive. From 1900 to 1905 no assistance of any kind was given, but from 1906 onwards assistance has again been afforded, a total of 5058 State-assisted immigrants being recorded for the year 1910. In Queensland and Western Australia, such assistance, although varying considerably in volume from year to year, has been accorded for many years past. The numbers so assisted during 1910 were 6918 in Queensland, and 3115 in Western Australia. Assistance to immigrants, which in the case of Victoria, had practically ceased in 1873, has recently been again afforded, and such assistance was rendered by the Victorian Government to 652 immigrants in 1909, while in 1910 the number so assisted was 1690. In South Australia, assistance was rendered to 665 immigrants in 1911, in which year the principle of State assistance was again introduced by that State.

The total number of immigrants to Australia from the earliest times up to the end of 1910, the cost of whose introduction was wholly or partly borne by the State, is approximately as follows:—

#### ASSISTED IMMIGRANTS UP TO END OF 1910.

##### STATES AND COMMONWEALTH.

State ... ..	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'wealth.
No. of Assisted Immigrants	227,759	142,931	183,867	95,348	15,062	21,699	686,636

### § 9. Enumerations and Estimates.

1. **Musters.**—Actual enumerations of Australia's population, of varying accuracy, have been made from the earliest times onward. Originally known as "Musters," these were first undertaken with a view to estimating the food and other requirements of the settlements. These musters, the results of which are said to have been very unreliable, appear to have been carried out at least annually from 1788 to 1825, when they were discontinued.

2. **Census-taking.**—The first regular Census in Australia was that of New South Wales, in November, 1828. The dates on which Censuses have been taken in the several States, and the populations enumerated thereat, are as shewn in the table on page 142.

**3. The Census of 1901.**—A conference of the State Statisticians of Australia and New Zealand held in Sydney in February and March, 1900, aimed at securing uniformity in the collection and compilation of the Census of 1901. The householder's schedule which it drafted made provision for the collection of information in all the States under the following heads, viz.:—Name, Sex, Age, Conjugal Condition, Relation to Head of Household, Occupation, Sickness and Infirmary, Birthplace, Length of Residence in Colony, Religion, Education, Materials of Houses and Number of Rooms. In addition to these, it was agreed that States so desiring might include further inquiries relating to Land, Live Stock, Crops, and certain other matters.

Provision was made for uniformity in the classification and compilation of the data by formulating rules for dealing with cases in which differences of opinion as to methods of treatment might exist. Thus, although conducted by six different States, the Census of the Commonwealth, as taken in 1901, was carried out on a fairly uniform plan, and consequently furnished data in many ways suitable for purposes of aggregation or comparison. A detailed examination of the results, however, gives many indications of departure from a common line of action, which, in the absence of a central authority, can hardly be avoided in an undertaking of this nature.

**4. The Census of 1911.**—Under Section 51, sub-section (xi.) of the Constitution Act, power is given to the Parliament of the Commonwealth to make laws with respect to "Census and Statistics." This power was brought into requisition in 1905, when the Census and Statistics Act 1905 became law, being assented to on 8th December, 1905. Under this Act provision is made for the appointment of a Commonwealth Statistician, and amongst other duties that officer is charged with the taking of a Census in the year 1911 and in every tenth year thereafter.

The particulars which the Act requires to be included in the Census schedule are almost identical with those which were contained in the 1901 schedule, the principal alterations being that "Length of Residence in Australia" is specified instead of "Length of Residence in the Colony of Enumeration," that "Duration of Marriage" was to be asked in all cases, and that nationality was to be ascertained in addition to birthplace. As already stated in § 1 of the present section, the Census was taken as at 3rd April, 1911.

In each State a Census supervisor was appointed to control the collection within that State under the direction of the Commonwealth Statistician. Each State was then divided into Census districts, each of which was placed in the charge of an enumerator, and each Census district was further subdivided into collectors' districts, one collector for each district. The results are, at the time of writing, in course of tabulation, and a summary of the latest results available to the date of going to press will be found in a special Census Appendix hereto.

It should be noted, in connection with the census of 1911, that a slight change in defining the date of reference has been made in order to accord with the English practice. In previous Australian censuses the date of the census has been taken to be that of the day preceding the midnight which is adopted as the determining point. Thus, at the census of 1901, where the figures given relate approximately to midnight between the 31st March and the 1st April, the Australian census was stated to be that of the 31st March, while in a precisely similar case in England it was stated to be that of 1st April. At the census of 1911, taken as at midnight between the 2nd and 3rd April, the date of the census has, in accordance with the English practice, been stated to be the 3rd April, and that day was gazetted as the day of the census.

The total population enumerated at the several Australian Censuses are shown in the following table:—

### AUSTRALIAN CENSUSES.

Census Year.	Population Enumerated (exclusive of Aborigines).						
	New South Wales.	Victoria.	Queensland	South Australia.	Western Australia.	Tasmania.	Commonwealth. (Total)
1828	(Nov.) 36,598	...	...	...	...	...	...
1833	(2nd Sept.) 60,794	...	...	...	...	...	...
1836	(2nd Sept.) 77,096	...	...	...	...	...	...
1841	(2nd March) 130,856	...	...	...	...	(27th Sept.) 50,216	...
1844	...	...	...	(26th Feb.) 17,366	...	...	...
1846	(2nd March) 189,609	...	...	(26th Feb.) 22,390	...	...	...
1847	...	...	...	...	...	(31st Dec.) 70,164	...
1848	...	...	...	...	(10th Oct.) 4,622	...	...
1851	(1st Mar.) <sup>1</sup> 268,344	...	...	(1st Jan.) 63,700	...	(1st Mar.) 70,130	...
1854	...	(26th Apr.) <sup>2</sup> 234,298	...	...	(30th Sept.) 11,743	...	...
1855	...	...	...	(31st Mar.) 85,821	...	...	...
1856	(1st March) 269,722	...	...	...	...	...	...
1857	...	(29th Mar.) 408,998	...	...	...	(31st Mar.) 81,492	...
1859	...	...	...	...	(31st Dec.) 14,837	...	...
1861	(7th April) 350,860	(7th April) 538,628	(7th April) <sup>3</sup> 30,059	(7th April) 126,830	...	(7th April) 89,977	...
1864	...	...	(1st Jan.) 61,467	...	...	...	...
1866	...	...	...	(26th Mar.) 163,452	...	...	...
1868	...	...	(2nd Mar.) 99,901	...	...	...	...
1870	...	...	...	...	(31st Mar.) 24,785	(7th Feb.) 99,328	...
1871	(2nd April) 502,998	(2nd April) 730,198	(1st Sept.) 120,104	(2nd April) 185,626	...	...	...
1876	...	...	(1st May) 173,283	(26th Mar.) 213,271	...	...	...
1881 <sup>3</sup>	749,825	861,566	213,525	279,865	29,708	115,705	2,250,194
1886	...	...	(1st May) 322,853	...	...	...	...
1891 <sup>4</sup>	1,123,954	1,139,840	393,718	320,431	49,782	146,667	3,174,392
1901 <sup>5</sup>	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801
1911 <sup>6</sup>	1,646,734	1,315,551	605,813	408,558	282,114	191,211	4,455,005*

\* Including Northern Territory, 3310, previously included in South Australia; and Federal Capital Territory, 1714, previously included in N.S.W.

1. Including Port Phillip District, which afterwards became the Colony of Victoria. 2. Previously included with New South Wales. 3. 3rd April. 4. 5th April. 5. 31st March. 6. 3rd April.

**5. Estimates of Population.**—In the absence of an annual enumeration of the population, it becomes necessary to adopt some method of estimating it for intercensal periods, basing such estimates on the results of the most recent Censuses. The manner in which

this is effected varies, however, in different parts of the world. In England, for example, the assumption made is that the rate of increase of the preceding intercensal period will continue unchanged during the current period. Again, in the United States, it has been assumed, in certain cases, that the numerical increase per annum ascertained for the preceding intercensal period will hold good for the current period. From the earliest times in Australia, "statistics of fluctuation" have been obtained from the records of births, deaths, arrivals and departures. With reasonable thoroughness in the collection of such statistics, the deduced estimates possess much greater weight than those based on the mere assumption of a continuation of the increase experienced in the preceding period. In most cases, however, estimates of population, based on statistics of fluctuation, are found to be in excess at the Census, thus indicating a uniform tendency to over-estimation, and the necessity for a correction. In the population figures given in the earlier portion of the present section, the estimates of the population of the several States have been carefully revised, the results of the various Censuses being taken in conjunction with the records of births, deaths, arrivals and departures. It is believed that by this means the population of the Commonwealth from the date of settlement onwards has been obtained with a high degree of accuracy, and that the figures supplied represent a reasonably close approximation to the actual numbers. Particulars for the several States from the date of settlement onwards are given in the following tables, and are shewn by graphs on pages 157 to 159:—

COMMONWEALTH POPULATION FROM EARLIEST DATE.

MALES.

Year.	Estimated Population at end of Year.						
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
1788	...	...	...	...	...	...	*
1790	...	...	...	...	...	...	*
1795	...	...	...	...	...	...	*
1800	3,780	...	...	...	...	...	3,780
1805	5,395	...	...	...	...	...	5,395
1810	7,585	...	...	...	...	...	7,585
1815	9,848	...	...	...	...	...	9,848
1820	23,784	...	...	...	...	...	23,784
1825	29,309	...	...	...	...	10,979†	40,288
1830	33,900	...	...	...	877	18,108	52,885
1835	51,949	...	...	...	1,231	28,749	81,929
1840	85,560	...	...	8,272	1,434	32,040	127,306
1845	113,739	...	...	12,810	2,689	43,921	173,159
1850	154,976	...	...	35,902	3,576	44,229	238,683
1855	147,822	226,462*	...	48,843	8,311	38,680	470,118
1860	197,851	330,302	16,817*	64,340	9,597	49,653	668,560
1865	222,890	348,717	53,292	84,255	13,575	50,549	773,278
1870	272,121	397,230	69,221	94,894	15,511	53,517	902,494
1875	322,534	424,269	102,161	108,706	16,141	54,678	1,028,489
1880	404,952	450,558	124,013	147,438	16,985	60,568	1,204,514
1885	518,606	504,097	186,866	162,425	20,688	67,712	1,460,394
1890	602,704	595,519	223,252	166,049	28,854	76,453	1,692,831
1895	668,209	607,933	248,865	180,314	69,733	80,485	1,855,539
1900	716,047	601,773	274,684	184,637	110,088	89,763	1,976,992
1905	782,897	598,134	291,807	184,835	146,498	95,947	2,100,118
1910	858,181	646,482	325,513	209,295	157,971	98,866	2,296,308

\* Details not available.

† Previously included with New South Wales.

## FEMALES.

Year.	Estimated Population at end of Year.						
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1788	...	...	...	...	...	...	†
1790	...	...	...	...	...	...	†
1795	...	...	...	...	...	...	†
1800	1,437	...	...	...	...	...	1,437
1805	2,312	...	...	...	...	...	2,312
1810	3,981	...	...	...	...	...	3,981
1815	5,215	...	...	...	...	...	5,215
1820	9,759	...	...	...	...	...	9,759
1825	9,004	...	...	...	...	3,213	12,217
1830	10,688	...	...	...	295	6,171	17,154
1835	19,355	...	...	...	647	11,423	31,425
1840	41,908	...	...	6,358	877	13,959	63,102
1845	74,179	...	...	9,650	1,790	20,370	105,989
1850	111,924	...	...	27,798	2,310	24,641	166,673
1855	118,179	120,843*	...	48,544	4,294	31,282	323,142
1860	150,695	207,932	11,239*	61,242	5,749	40,168	477,025
1865	185,616	269,074	33,629	77,222	7,806	43,418	616,765
1870	225,871	326,695	46,051	89,652	9,624	47,369	745,262
1875	270,833	370,665	66,944	101,370	10,861	49,061	869,734
1880	336,190	408,047	87,027	128,955	12,576	54,222	1,027,017
1885	425,261	455,741	129,815	146,888	15,271	61,148	1,234,124
1890	510,571	538,209	168,864	152,898	19,648	68,334	1,458,524
1895	587,294	577,743	194,199	171,654	30,782	74,410	1,636,082
1900	644,258	594,440	219,163	177,470	69,879	83,137	1,788,347
1905	704,987	612,287	239,675	181,832	103,640	90,438	1,932,859
1910	785,674	654,926	273,503	200,874	118,861	94,937	2,128,775

## PERSONS.

1788	859	...	...	...	...	...	859
1790	2,056	...	...	...	...	...	2,056
1795	3,466	...	...	...	...	...	3,466
1800	5,217	...	...	...	...	...	5,217
1805	7,707	...	...	...	...	...	7,707
1810	11,566	...	...	...	...	...	11,566
1815	15,063	...	...	...	...	...	15,063
1820	33,543	...	...	...	...	...	33,543
1825	38,313	...	...	...	...	14,192*	52,505
1830	44,588	...	...	...	1,172	24,279	70,039
1835	71,304	...	...	...	1,878	40,172	113,354
1840	127,468	...	...	14,630	2,311	45,999	190,408
1845	187,918	...	...	22,460	4,479	64,291	279,148
1850	266,900	...	...	63,700	5,886	68,870	405,356
1855	266,001	347,305*	...	97,387	12,605	69,962	793,260
1860	348,546	538,234	28,056*	125,582	15,346	89,821	1,145,585
1865	408,506	617,791	86,921	161,477	21,381	93,967	1,390,043
1870	497,992	723,925	115,272	184,546	25,135	100,886	1,647,756
1875	593,367	794,934	169,105	210,076	27,002	103,739	1,898,223
1880	741,142	858,605	211,040	276,393	29,561	114,790	2,231,531
1885	943,867	959,838	316,681	309,313	35,959	128,860	2,694,518
1890	1,113,275	1,133,728	392,116	318,947	48,502	144,787	3,151,355
1895	1,255,503	1,185,676	443,064	351,968	100,515	154,895	3,491,621
1900	1,360,305	1,196,213	493,847	362,107	179,967	172,900	3,765,339
1905	1,487,884	1,210,421	531,482	366,667	250,138	186,385	4,032,977
1910	1,643,855	1,301,408	599,016	410,169	276,832	193,803	4,425,083

\* Previously included with New South Wales.

† Details not available.

The tables on the two preceding pages, shewing the quinquennial figures for the male, female, and total population of each State and the Commonwealth, give sufficient indication, for general purposes, of its progress. A reference to the diagrams given hereinafter (pp. 157 to 159), on which the graphs shew the particulars for *each* year, is also desirable. The characteristics of the fluctuations of each element, or of the totals, will be more readily perceived by reference to the graphs than they possibly can by reference to these numerical tables. The earliest date for which particulars as to sex were available is 1796. The figures from 1788 to 1825 inclusive are based upon the results of the musters taken in those years; those for subsequent years are founded upon estimates made on the basis of the Census results and the annual returns of births and deaths and immigration and emigration.

## § 10. Principal Results of Census of 1901.

1. **Census Results.**—In the first issue of the Official Year Book tables are given shewing in some detail particulars concerning the Census of 1901 for the several States under the headings of Ages, Birthplaces, Occupations, Religions, and Conjugal Condition. Similar information in a very condensed form is given hereunder. For fuller particulars for the 1901 Census reference should be made to the first issue (see Year Book No. 1, pp. 164 to 179). In the special Census Appendix hereto is given a summary of the latest particulars concerning the Census of 1911, available to date of going to press.

2. **Ages.**—The numbers of persons of each sex in some of the more important age groups enumerated in the several States of the Commonwealth at the Census of 31st March, 1901, are as follows:—

### AGE DISTRIBUTION OF COMMONWEALTH POPULATION ON 31st MARCH, 1901.

Age Group.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
MALES.							
Under 5 years	80,308	66,792	31,307	20,260	10,441	10,702	219,810
5 and under 15	165,771	139,419	60,913	44,949	16,396	21,809	449,257
15 „ 21	83,177	69,311	28,514	23,625	9,045	11,032	224,704
21 „ 45	255,828	216,062	106,535	63,123	61,714	31,850	735,112
45 „ 65	95,320	72,772	37,997	25,128	12,751	10,282	254,250
65 and upwards	27,038	36,813	7,916	7,337	2,259	3,829	85,192
Not stated ...	2,563	2,551	3,821	279	269	120	9,603
Total ...	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928
FEMALES.							
Under 5 years	78,553	65,163	30,687	19,817	10,234	10,163	214,617
5 and under 15	162,043	137,111	59,504	44,211	16,176	21,351	440,396
15 „ 21	84,193	71,341	27,160	23,889	7,127	10,872	224,582
21 „ 45	229,130	223,895	75,475	61,243	30,689	28,161	648,593
45 „ 65	70,896	68,837	22,319	21,421	5,914	9,083	198,470
65 and upwards	19,535	29,247	4,957	7,601	1,063	3,194	65,597
Not stated ...	491	1,756	1,024	274	46	27	3,618
Total ...	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873

## AGE DISTRIBUTION OF COMMONWEALTH POPULATION.—Continued.

Age Group.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
PERSONS.							
Under 5 years	158,861	131,955	61,994	40,077	20,675	20,865	434,427
5 and under 15	327,814	276,530	120,417	89,160	32,572	43,160	889,653
15     "     21	167,370	140,652	55,674	47,514	16,172	21,904	449,286
21     "     45	484,958	439,957	182,010	124,366	92,403	60,011	1,383,705
45     "     65	166,216	141,609	60,316	46,549	18,665	19,365	452,720
65 and upwards	46,573	66,060	12,873	14,938	3,322	7,023	150,789
Not stated ...	3,054	4,307	4,845	553	315	147	13,221
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

3. **Birthplaces.**—In the next table is given a summary of the populations of the several States of the Commonwealth on 31st March, 1901, classified according to sex and birthplace, the birthplaces being grouped under the five continental divisions of the globe, with two additional headings for those born in Polynesia, and those born at sea. Of the total population of 3,773,801 those of unspecified birthplace numbered only 7922, or little more than 2 per thousand :—

## COMMONWEALTH POPULATION, ON 31st MARCH, 1901.

## CLASSIFIED ACCORDING TO BIRTHPLACE.

Birthplace.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
MALES.							
Australasia ...	546,311	463,736	168,261	143,108	73,315	75,930	1,470,661
Europe ...	143,553	125,364	84,918	36,348	33,632	12,262	436,077
Asia ...	13,221	8,019	13,291	4,099	4,416	726	43,772
Africa ...	642	503	257	129	160	51	1,742
America ...	3,486	2,376	1,267	570	918	272	8,889
Polynesia ...	783	90	8,446	16	52	11	9,398
At Sea ...	1,100	782	336	259	182	88	2,747
Unspecified ...	909	2,850	227	172	200	284	4,642
Total ...	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928
FEMALES.							
Australasia ...	543,432	486,114	156,746	147,596	56,341	73,201	1,463,430
Europe ...	96,999	105,555	62,415	29,840	13,995	8,951	317,755
Asia ...	987	774	587	277	394	223	3,242
Africa ...	344	423	121	106	83	50	1,127
America ...	1,327	1,283	421	241	233	113	3,618
Polynesia ...	356	113	431	23	26	16	965
At Sea ...	867	782	298	280	135	94	2,456
Unspecified ...	529	2,306	107	93	42	203	3,280
Total ...	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873



COMMONWEALTH POPULATION—Continued.

Birthplace.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
PERSONS:							
Australasia ...	1,089,743	949,850	325,007	290,704	129,656	149,131	2,934,091
Europe ...	240,552	230,919	147,333	66,188	47,627	21,213	753,832
Asia ...	14,208	8,793	13,878	4,376	4,810	949	47,014
Africa ...	986	926	378	235	243	101	2,869
America ...	4,813	3,659	1,688	811	1,151	385	12,507
Polynesia ...	1,139	203	8,877	39	78	27	10,363
At Sea ...	1,967	1,564	634	539	317	182	5,203
Unspecified ...	1,438	5,156	334	265	242	487	7,922
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

4. **Occupations.**—In the compilation of the results of the Census of 31st March, 1901, the populations of the several States were tabulated according to occupation in the following classes:—

(i.) *Professional.* Embracing all persons not otherwise classed, mainly engaged in the government and defence of the country, and in satisfying the moral, intellectual, and social wants of its inhabitants.

(ii.) *Domestic.* Embracing all persons engaged in the supply of board and lodging, and in rendering personal services for which remuneration is usually paid.

(iii.) *Commercial.* Embracing all persons directly connected with the hire, sale, transfer, distribution, storage, and security of property and materials.

(iv.) *Transport and Communication.* Embracing all persons engaged in the transport of persons or goods, or in effecting communication.

(v.) *Industrial.* Embracing all persons not otherwise classed who are principally engaged in various works of utility, or in specialities connected with the manufacture, construction, modification, or alteration of materials so as to render them more available for the various uses of man, but excluding, as far as possible, all who are mainly or solely engaged in the service of commercial interchange.

(vi.) *Agricultural, Pastoral, Mineral, and other Primary Producers.* Embracing all persons mainly engaged in the cultivation or acquisition of food products, and in obtaining other raw materials from natural sources.

(vii.) *Indefinite.* Embracing all persons who derive incomes from services rendered, but the direction of which services cannot be exactly determined.

(viii.) *Dependents.* Embracing all persons dependent upon relatives or natural guardians, including wives, children, and others, not otherwise engaged in pursuits for which remuneration is paid, and all persons depending upon private charity, or whose support is a burthen on the public revenue.

Particulars concerning the number contained in each of these classes are given in the table hereunder:—

## COMMONWEALTH POPULATION ON 31st MARCH, 1901.

## CLASSIFIED ACCORDING TO OCCUPATION.

Occupation.	N.S.W.	Vic.	Qld.	S. Aus.	W. Aus.	Tas.	Total C'with.
MALES.							
Class.							
I.—Professional ... ..	26,855	20,380	9,122	5,372	5,103	3,067	69,899
II.—Domestic ... ..	20,128	13,128	7,791	3,452	4,373	1,463	50,335
III.—Commercial ... ..	67,097	64,632	22,958	17,080	10,280	6,097	188,144
IV.—Transport and Communication	42,822	30,318	17,745	12,591	10,736	4,518	118,730
V.—Industrial ... ..	122,692	113,507	44,065	34,255	19,602	16,475	350,596
VI.—Primary Producers ... ..	168,212	140,112	79,421	45,898	35,081	25,439	494,163
VII.—Indefinite (of independ't means)	3,597	7,242	740	180	207	301	12,267
VIII.—Dependents ... ..	256,634	210,922	94,084	64,094	27,229	32,039	685,002
Unspecified ... ..	1,968	3,479	1,077	1,779	264	225	8,792
Total ... ..	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928

## FEMALES.

I.—Professional ... ..	14,529	14,841	4,486	3,485	1,964	1,930	41,235
II.—Domestic ... ..	52,690	53,676	16,402	14,529	6,930	6,474	150,701
III.—Commercial ... ..	10,567	14,415	3,524	3,085	1,523	1,400	34,514
IV.—Transport and Communication	1,045	1,198	341	259	256	330	3,429
V.—Industrial ... ..	23,996	32,706	7,407	6,978	2,908	2,275	75,570
VI.—Primary Producers ... ..	4,642	24,968	3,090	3,263	491	2,460	38,944
VII.—Indefinite (of independ't means)	5,927	2,824	691	213	117	357	10,129
VIII.—Dependents ... ..	531,164	451,284	184,344	145,214	57,571	66,942	1,436,519
Unspecified ... ..	281	1,408	841	1,430	189	683	4,832
Total ... ..	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873

## PERSONS.

I.—Professional ... ..	41,384	35,221	13,608	8,857	7,067	4,997	111,134
II.—Domestic ... ..	72,818	66,804	24,193	17,981	11,903	7,937	201,036
III.—Commercial ... ..	77,664	79,047	26,482	20,165	11,903	7,497	222,658
IV.—Transport and Communication	43,867	31,516	18,086	12,850	10,992	4,848	123,159
V.—Industrial ... ..	146,688	146,213	51,472	41,233	21,810	18,750	426,166
VI.—Primary Producers ... ..	172,854	165,110	82,511	49,161	35,572	27,899	533,107
VII.—Indefinite (of independ't means)	9,524	10,066	1,431	393	324	658	22,396
VIII.—Dependents ... ..	787,798	662,206	278,428	209,308	84,800	98,981	2,121,521
Unspecified ... ..	2,249	4,887	1,918	3,209	453	908	13,624
Total ... ..	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

5. **Religions.**—In the Acts under which the Census of 1901 was taken in the several States, persons enumerated were required under penalty to furnish replies to all the inquiries contained in the schedule, with the exception of that relating to religion. In this case, any person objecting to give such particulars was allowed to insert the words "Object to state" in the column provided for religion. Of the total population of 3,773,801 there were 42,131, or 1.12 per cent., who availed themselves of this option. There were also 14,060, or 0.37 per cent., concerning whom no particulars as to religion were obtained.

Of the remainder, 3,626,449, or 97.55 per cent., were members of the various Christian denominations, 53,371 were members of non-Christian religions, 31,011 were of indefinite religious belief, and 6779 stated that they were of no religion.

Amongst the Christian denominations, that most numerously represented was the Church of England, with 1,497,576 adherents, the next in order being the Roman Catholic (850,620), the Methodist (504,101), the Presbyterian (426,105), the Baptist (89,338), the Lutheran (75,021), the Congregational (73,561), and the Salvation Army (31,100).

The principal non-Christian religions represented in Australia were the Hebrew, Mahomedan, Buddhist and Confucian, the members of the Hebrew congregation totalling 15,239.

Those included under the head of "Indefinite" in the attached table consist mainly of persons who stated that they were "Freethinkers" or "Agnostics," or returned themselves as being of "No Denomination," while under the head of "No Religion" are given those who were so returned on the schedules as well as a small number who stated that they were "Atheists."

COMMONWEALTH POPULATION ON 31st MARCH, 1901.

CLASSIFIED ACCORDING TO RELIGION.

Religion.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
MALES.							
Christian ...	678,845	577,191	250,922	171,267	102,564	86,284	1,867,073
Non-Christian ...	11,043	8,577	17,481	4,030	3,042	460	44,633
Indefinite ...	6,451	5,805	3,112	4,096	2,864	627	22,955
No Religion ...	1,424	1,920	612	270	1,138	49	5,413
Object to state...	9,058	6,997	3,424	4,759	2,429	1,776	28,443
Unspecified ...	3,184	3,230	1,452	279	888	428	9,411
Total ...	710,005	603,720	277,003	184,701	112,875	89,624	1,977,928
FEMALES.							
Christian ...	634,656	584,883	216,684	172,900	68,927	81,326	1,759,376
Non-Christian ...	3,439	3,005	942	579	664	109	8,735
Indefinite ...	1,665	2,755	948	1,883	574	231	8,056
No Religion ...	289	550	160	86	272	9	1,366
Object to state...	4,010	3,830	1,366	2,734	624	1,124	13,688
Unspecified ...	782	2,327	1,026	274	188	52	4,649
Total ...	644,841	597,350	221,126	178,456	71,249	82,851	1,795,873
PERSONS.							
Christian ...	1,313,501	1,162,074	467,606	344,167	171,491	167,610	3,626,449
Non-Christian ...	14,482	11,582	18,423	4,609	3,706	569	53,371
Indefinite ...	8,116	8,560	4,060	5,979	3,438	858	31,011
No Religion ...	1,713	2,470	772	356	1,410	58	6,779
Object to state...	13,068	10,827	4,790	7,493	3,053	2,900	42,131
Unspecified ...	3,966	5,557	2,478	553	1,026	480	14,060
Total ...	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801

6. **Conjugal Condition.**—In the following tables are given summaries of the particulars concerning the population of the several States on 31st March, 1901, classified according to age and conjugal condition. In the case of South Australia divorced persons and persons whose conjugal condition was not stated were included under other heads. The figures given in these tables are exclusive of 1553 half-castes in Queensland, and 553 in South Australia, whose ages and conjugal condition were unspecified :—

### COMMONWEALTH POPULATION ON 31st MARCH, 1901.

CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

#### (a) MALES.

Age.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
<b>MARRIED.</b>							
Under 15 ...	2	...	...	...	...	...	2
15 and under 21 ...	477	245	110	141	55	55	1,083
21 " 45 ...	123,206	104,080	44,991	30,839	23,370	15,642	342,128
45 " 60 ...	54,735	42,118	18,921	16,115	6,604	6,640	145,133
60 and upwards ...	24,312	29,477	8,088	7,659	2,005	3,456	74,997
Unspecified adults	190	240	103	...	29	14	576
<b>Total</b> ...	<b>202,922</b>	<b>176,160</b>	<b>72,213</b>	<b>54,754</b>	<b>32,063</b>	<b>25,807</b>	<b>563,919</b>
<b>NEVER MARRIED.</b>							
Under 15 ...	246,354	206,713	92,227	65,209	26,845	32,511	669,859
15 and under 21 ...	82,689	69,062	28,394	23,481	8,987	10,976	223,589
21 " 45 ...	127,451	107,472	59,745	31,304	37,026	15,503	378,501
45 " 60 ...	17,291	10,786	9,928	3,534	3,342	1,166	46,047
60 and upwards ...	9,967	10,048	3,557	1,038	1,147	716	26,473
Unspecified adults	498	581	2,788	...	109	45	4,021
<b>Total</b> ...	<b>484,250</b>	<b>404,662</b>	<b>196,639</b>	<b>124,566</b>	<b>77,456</b>	<b>60,917</b>	<b>1,348,490</b>
<b>WIDOWED.</b>							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	7	4	5	3	3	1	23
21 " 45 ...	4,034	3,462	1,514	980	1,086	539	11,615
45 " 60 ...	6,120	4,524	2,276	1,487	981	682	16,070
60 and upwards ...	9,252	11,919	3,001	2,632	854	1,336	28,994
Unspecified adults	38	64	16	...	8	2	128
<b>Total</b> ...	<b>19,451</b>	<b>19,973</b>	<b>6,812</b>	<b>5,102</b>	<b>2,932</b>	<b>2,560</b>	<b>56,830</b>
<b>DIVORCED.</b>							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	...	...	...	...	...	...	...
21 " 45 ...	427	151	70	...	81	24	753
45 " 60 ...	214	91	18	...	26	10	359
60 and upwards ...	50	45	13	...	4	1	113
Unspecified adults	1	2	...	...	...	...	3
<b>Total</b> ...	<b>692</b>	<b>289</b>	<b>101</b>	<b>*</b>	<b>111</b>	<b>35</b>	<b>1,228</b>

\* Included under other heads.

## (a) MALES—Continued.

Age.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
NOT STATED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	4	...	5	...	...	...	9
21 " 45 ...	710	897	215	...	151	142	2,115
45 " 60 ...	227	281	71	...	31	55	665
60 and upwards ...	190	296	40	...	16	49	591
Unspecified adults	1,559	1,162	134	...	115	59	3,029
Total ...	2,690	2,636	465	*	313	305	6,409

## TOTAL.

Under 15 ...	246,356	206,713	92,227	65,209	26,845	32,511	669,861
15 and under 21 ...	83,177	69,311	28,514	23,625	9,045	11,032	224,704
21 " 45 ...	255,828	216,062	106,535	63,123	61,714	31,850	735,112
45 " 60 ...	78,587	57,800	31,214	21,136	10,984	8,553	208,274
60 and upwards ...	43,771	51,785	14,699	11,329	4,026	5,558	131,168
Unspecified adults	2,286	2,049	*3,041	...	261	120	7,757
Total ...	710,005	603,720	†276,230	†184,422	112,375	89,624	1,976,876

\* Included under other heads. † Exclusive of 773 half-castes. ‡ Exclusive of 279 half-castes.

## (b) FEMALES.

Age.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
MARRIED.							
Under 15 ...	2	...	...	...	...	...	2
15 and under 21 ...	4,837	2,245	1,592	815	720	633	10,842
21 " 45 ...	144,408	125,585	51,308	36,280	21,797	17,578	396,956
45 " 60 ...	42,981	36,613	13,990	12,989	3,669	5,240	115,482
60 and upwards ...	13,757	18,058	4,463	5,257	843	1,998	44,376
Unspecified adults	201	340	116	...	14	11	632
Total ...	206,186	182,841	71,469	55,341	27,043	25,460	568,340

## NEVER MARRIED.

Under 15 ...	240,638	202,650	90,205	64,028	26,425	31,514	655,460
15 and under 21 ...	79,266	69,087	25,543	23,060	6,403	10,234	213,593
21 " 45 ...	76,394	90,379	21,616	23,118	7,804	9,729	229,040
45 " 60 ...	4,437	5,396	816	1,420	306	788	13,163
60 and upwards ...	1,447	2,102	267	496	58	301	4,671
Unspecified adults	144	312	77	...	8	5	546
Total ...	402,326	369,926	138,524	112,122	41,004	52,571	1,116,473

## (b) FEMALES—Continued.

Age.	N.S.W.	Victoria.	Qld.	Sth. Aust.	W. Aust.	Tas.	Total C'wealth.
WIDOWED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	30	7	11	14	1	3	66
21 " 45 ...	7,558	7,309	2,492	1,845	1,014	788	21,006
45 " 60 ...	11,133	12,367	3,536	2,986	1,027	1,296	32,345
60 and upwards ...	16,429	23,211	4,167	5,874	1,066	2,584	53,331
Unspecified adults	57	127	12	...	4	1	201
Total ...	35,207	43,021	10,218	10,719	3,112	4,672	106,949

DIVORCED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	4	2	1	...	...	...	7
21 " 45 ...	580	252	33	...	39	18	922
45 " 60 ...	111	59	10	...	3	3	186
60 and upwards ...	13	13	...	...	...	1	27
Unspecified adults	...	5	...	...	...	...	5
Total ...	708	331	44	*	42	22	1,147

NOT STATED.							
Under 15 ...	...	...	...	...	...	...	...
15 and under 21 ...	56	...	13	...	3	2	74
21 " 45 ...	190	370	26	...	35	48	669
45 " 60 ...	42	114	10	...	1	31	193
60 and upwards ...	81	151	17	...	4	35	283
Unspecified adults	45	596	45	...	5	10	701
Total ...	414	1,231	111	*	48	126	1,930

TOTAL.							
Under 15 ...	240,640	202,650	90,205	64,028	26,425	31,514	655,462
15 and under 21 ...	84,193	71,341	27,160	23,889	7,127	10,872	224,582
21 " 45 ...	229,130	223,895	75,475	61,243	30,689	28,161	648,593
45 " 60 ...	58,704	54,549	18,362	17,395	5,006	7,358	161,374
60 and upwards ...	31,727	43,535	8,914	11,627	1,971	4,919	102,693
Unspecified adults	447	1,380	250	...	31	27	2,135
Total ...	644,841	597,350	†220,366	†178,182	71,249	82,851	1,794,839

\* Included under other heads. † Exclusive of 760 half-castes. ‡ Exclusive of 274 half-castes.

## § 11. Naturalisation.

1. **The Commonwealth Act.**—The Commonwealth Constitution empowers the Commonwealth Parliament to make laws with respect to "Naturalisation and Aliens," a power which was exercised when the "Naturalisation Act of 1903" was passed. This Act was assented to on 13th October of that year, and came into force on 1st January, 1904, in accordance with a proclamation by *Gazette* of 14th November, 1903.

Prior to the passing of this Act the issue of certificates of naturalisation had been a function of the State Governments, carried out under Acts of the several State Legislatures, which, however, did not differ materially from each other, and furnished the basis on which the Commonwealth Act was drafted. From 1st January, 1904, when the Commonwealth Act became operative, the right to issue certificates of naturalisation in the Commonwealth has been vested exclusively in the Federal Government, but all certificates or letters of naturalisation issued under the several State Acts prior to that date entitle the recipients to be deemed to be naturalised under the Commonwealth Act.

The grant of a certificate of naturalisation entitles the recipient within the limits of the Commonwealth to all the rights and privileges, and renders him subject to all the obligations, of a natural-born British subject, with the exception that where, by any Commonwealth or State Constitution or Act, a distinction is made between natural-born British subjects and naturalised persons, such distinction shall hold good in the case of all persons naturalised under the Commonwealth Act.

Applications for certificate of naturalisation must be made to the Governor-General, the qualifications required in an applicant being:—

- (i.) That he is not a British subject.
- (ii.) That he is not an aboriginal native of Asia, Africa, or the Islands of the Pacific, excepting New Zealand.
- (iii.) That he intends to settle in the Commonwealth.
- (iv.) (a) That he has resided in Australia continuously for two years immediately preceding naturalisation; or
- (b) That he has obtained in the United Kingdom a certificate or letters of naturalisation.

An applicant who has already obtained a certificate or letters of naturalisation in the United Kingdom is required to furnish, in support of his application—

- (i.) His certificate or letters of naturalisation.
- (ii.) His statutory declaration—
  - (a) That he is the person named therein.
  - (b) That he obtained the certificate or letters without fraud or intentional false statement.
  - (c) That the signature and seal thereto are, to the best of his knowledge and belief, genuine.
  - (d) That he intends to settle in the Commonwealth.

If the applicant is not already naturalised in the United Kingdom the particulars which he is required to furnish in support of his application are as follows:—

- (i.) His own statutory declaration stating—
  - (a) Name; (b) Age; (c) Birthplace; (d) Occupation; (e) Residence; (f) Length of residence in Australia; (g) Intention to settle in the Commonwealth.
- (ii.) A certificate signed by a Justice of the Peace, a postmaster, a teacher of a State school, or an officer of police, that the applicant is known to him and is of good repute.

In connection with any application for naturalisation, the Governor-General in Council is authorised to grant or withhold a certificate as he thinks most conducive to the public good, but the issue of a certificate to any person who is not already naturalised in the United Kingdom is not admissible until the applicant has taken an oath or affirmation of allegiance. The grant of a certificate is made free of charge.

In addition to naturalisation by grant of certificate, the Act makes provision for—

(i.) Naturalisation by marriage.

(ii.) Naturalisation by residence with naturalised parent.

The former relates to the case of a woman who is not herself a British subject, but is married to a British subject; the latter to that of an infant who is not a natural-born British subject, but who has resided at any time in Australia with a father or mother who is a naturalised British subject. In each instance the person concerned is deemed to be naturalised under the Commonwealth Act.

The administration of the Act is carried out by the Department of External Affairs, and the Governor-General is authorised to make such regulations as are necessary or convenient for giving effect to the Act.

2. **Statistics of Naturalisation.**—Particulars relative to the nationalities of the recipients of certificates of naturalisation issued under the Act during each of the five years 1906 to 1910, and to the countries from which such recipients had come, are shewn in the following table:—

#### COMMONWEALTH NATURALISATION CERTIFICATES GRANTED, 1906 to 1910.

Nationalities of Recipients.	No. of Certificates Granted.					Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.				
	1906.	1907.	1908.	1909.	1910.		1906.	1907.	1908.	1909.	1910.
German ...	446	365	475	1,091	694	Germany ...	360	296	381	948	567
Swedish ...	144	137	157	259	181	Great Britain ...	231	209	224	449	346
Italian ...	95	98	132	167	174	Italy ...	82	82	118	146	161
Danish ...	92	84	93	182	132	America (North) ...	78	71	74	147	107
Russian ...	89	66	83	132	135	Sweden ...	64	51	72	108	71
Norwegian ...	73	59	65	138	107	Denmark ...	55	44	66	106	76
Austrian ...	40	28	45	63	56	Norway ...	41	28	34	62	50
French ...	35	46	39	81	91	France ...	21	30	31	40	55
Swiss ...	24	38	36	70	51	South Africa ...	19	23	30	39	57
Greek ...	52	50	33	71	77	Switzerland ...	19	26	23	51	43
American (Nth.) ...	42	31	25	76	55	Austria ...	17	13	23	24	28
Dutch ...	12	8	14	28	18	Russia ...	13	11	21	23	40
Spanish ...	10	8	11	24	24	Egypt ...	20	23	19	31	22
Turkish ...	1	7	10	10	13	New Zealand ...	26	24	18	55	32
Rumanian ...	6	1	9	3	3	Greece ...	22	25	17	28	28
Belgian ...	10	1	7	7	14	Belgium ...	17	9	15	15	18
Portuguese ...	8	7	2	15	13	Spain ...	...	...	7	15	18
Chinese ...	...	...	2	1	1	Finland ...	...	...	...	12	...
Brazilian ...	1	1	1	5	...	Turkey ...	10	...	...	6	7
Bulgarian ...	...	1	1	1	3	China ...	...	...	...	...	10
Montenegrin ...	...	...	1	...	...	Mauritius ...	...	...	...	13	...
Servian ...	2	1	...	...	...	Holland ...	...	...	...	19	...
American (Sth.) ...	2	1	...	...	3	Other Countries ...	92	77	68	94	118
Chilian ...	1	1	...	4	2						
Mexican ...	...	1	...	1	...						
Peruvian ...	...	1	...	...	1						
Uruguayan ...	...	1	...	...	...						
Armenian ...	1	...	...	...	...						
Cuban ...	1	...	...	...	...						
Icelandic ...	...	...	...	2	1						
<b>Total</b> ...	<b>1,187</b>	<b>1,042</b>	<b>1,241</b>	<b>2,431</b>	<b>1,849</b>	<b>Total</b> ...	<b>1,187</b>	<b>1,042</b>	<b>1,241</b>	<b>2,431</b>	<b>1,849</b>



The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalisation during the years 1904 to 1910 were resident. The numbers of certificates granted under the several State Acts during the years 1901, 1902, and 1903 are also given.

**NATURALISATION CERTIFICATES GRANTED BY STATES AND COMMONWEALTH,  
1901 to 1910.**

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'wlth.
1901 ...	507	574	449	109	58	70	1,767
1902 ...	386	500	375	54	111	28	1,454
1903 ...	400	397	355	43	75	149	1,419
1904 ...	1,379	319	115	25	248	21	2,107
1905 ...	544	213	150	34	166	11	1,118
1906 ...	475	301	177	45	150	39	1,187
1907 ...	458	214	193	27	134	16	1,042
1908 ...	396	243	377	45	152	28	1,241
1909 ...	644	507	378	600	221	81	2,431
1910 ...	665	329	333	299	187	36	1,849

**3. Census Particulars.**—On the Personal Card used at the Census of 3rd April, 1911, an inquiry as to naturalisation was made, all persons who were British subjects by naturalisation being required to indicate the fact by inserting the letter N in the place provided for the purpose on the card. In addition, in checking the cards in the Census Bureau, instructions were given that cases of women naturalised by marriage to British subjects, and of children naturalised by residence with parents who have become British subjects, should be duly taken into account by the insertion of the letter N if originally omitted. The results of the tabulation are not available at the date of writing, but will be found in the Census Appendix. The corresponding figures obtained at the Census of 31st March, 1901, were as follows:—

**NUMBER OF NATURALISED BRITISH SUBJECTS.**

RECORDED AT THE AUSTRALIAN CENSUS OF 1911.

Particulars.	N.S.W.	Victoria	Qld.	S.Aust.	W.Aus.	Tas.	C'wlth. <sup>2</sup>
Males ...	3,265	3,304	1	1,360	576	119	8,624
Females ...	354	1,262	1	545	101	24	2,286
Persons ...	3,619	4,566	1	1,905	677	143	10,910

1. Not ascertained.      2. Exclusive of Queensland.

## § 12. Graphical Representation of Growth of Population.

1. **General.**—The nature of the fluctuations of the numbers representing (a) total population, or those representing (b) births and deaths from year to year, or (c) the natural increase, *i.e.*, the difference of births and deaths, or (d) the net immigration, all of which taken together make up the element of increase of total population, cannot be readily discerned from mere numerical tables. It has been deemed desirable therefore to furnish a series of graphical representations, shewing in some cases the characteristics of these elements from 1788 to 1910, and in others from 1860 to 1910. The graphs furnish at a glance a clear indication of the changes taking place, and of their significance from year to year. The great importance of such representations is that only by their means can the most recent changes be justly apprehended, either in their relation to the past, or their meaning for the future.

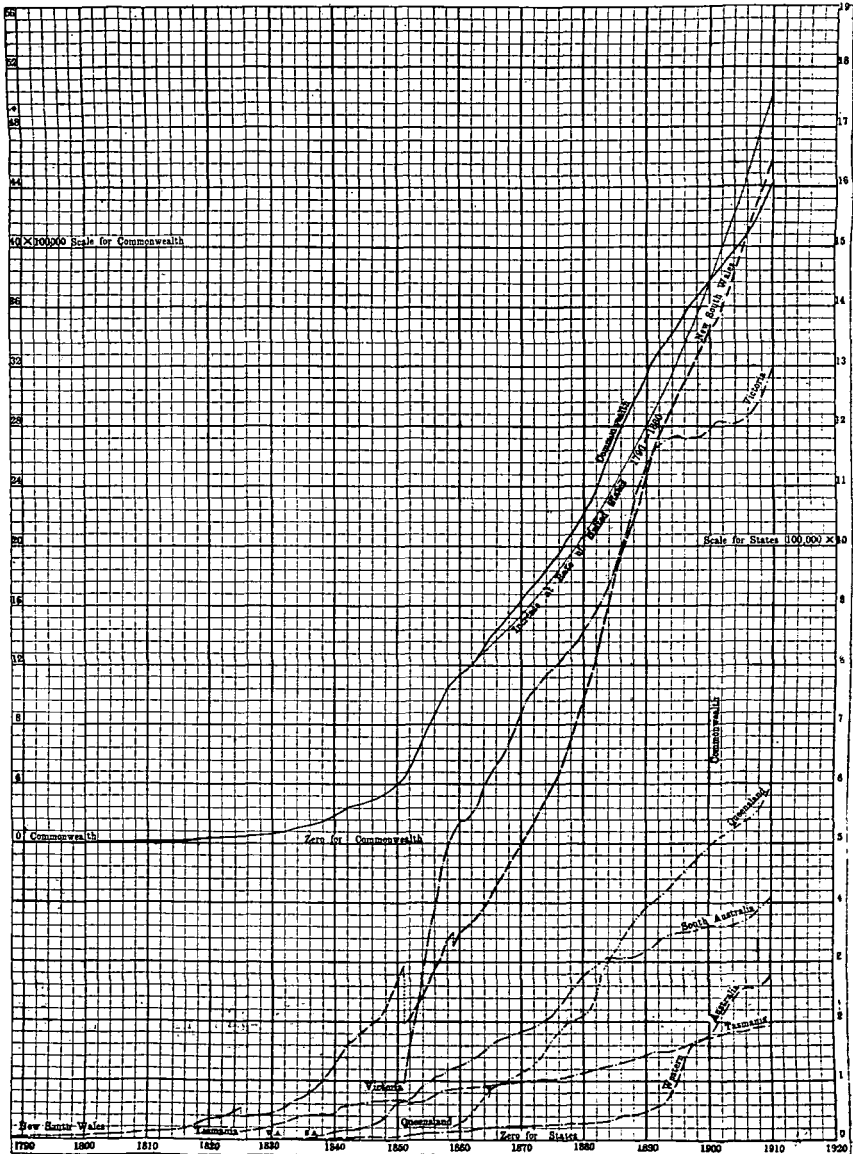
2. **Graphs of Total Population** (page 157).—These graphs furnish interesting evidence of the comparatively slow rate of growth of the several States and of the Commonwealth as a whole, during the period from the foundation of settlement in 1788 until 1832. From that year onwards to 1851, a moderately increased rate of progress was experienced. In 1851 gold was discovered in Australia, and the effect of this discovery on the population of the Commonwealth is shewn by the steepness of the curves for New South Wales and Victoria, and also for the Commonwealth, from this point onwards for a series of years. The sudden breaks in the continuity of the curves for New South Wales indicate the creation of new colonies, and their separation from the mother colony. Thus, Tasmania came into existence in 1825, Victoria in 1851, and Queensland in 1859. Owing to the extensive gold discoveries in Victoria, its population increased so rapidly that in 1854 its total passed that of New South Wales, and remained in excess until 1892, when the mother State again assumed the lead, which it has since maintained. The rate of increase in New South Wales is large, but the State is only sparsely populated. A feature of the New South Wales curve is its comparative regularity as compared with that of Victoria, the population of which State increased with great rapidity from 1851 to 1860, less rapidly from 1861 to 1878, with a further period of increased rapidity from 1878 to 1891, and a period of very slow and fluctuating growth from the latter year to 1910. Victoria, however, has a population density more than double that of Tasmania, and nearly three times that of New South Wales.

In the case of Queensland, the curve indicates a rate of growth which, though varying somewhat, has on the whole been satisfactory, and at times very rapid. Periods of particularly rapid increase occurred from 1862 to 1865, from 1873 to 1877, and from 1881 to 1889. The population of Queensland passed that of Tasmania in 1867, and that of South Australia in 1885. The population density of Queensland is less than one-sixteenth of that of Victoria.

The curve for South Australia indicates that with fluctuations more or less marked, the population increased at a moderate rate from the date of the foundation of the colony in 1834 until 1884, and that from that point onwards a diminished rate of increase was experienced. The population of South Australia passed that of Tasmania in 1852. Its density is about half of that of Queensland, about one-twelfth of that of New South Wales, and about one-thirty-third of that of Victoria.

The curve for Western Australia indicates that the population increased regularly but very slowly until 1886, when the discovery of gold in the Kimberley division caused an influx of population. The effects of the further rich discoveries of gold in the Murchison and Coolgardie districts in 1891 and 1892, are clearly shewn in the rapid increase of population in those and subsequent years to 1897. Two years of retarded progress then occurred, followed by a satisfactorily rapid rate of increase from 1899 to 1906, a slight decline in 1907 and a further advance in 1908, 1909, and 1910. The population of Western

GRAPHS OF TOTAL POPULATION OF THE COMMONWEALTH OF AUSTRALIA  
AND EACH STATE THEREIN, 1788-1910.



(See Tables pages 126 to 128.)

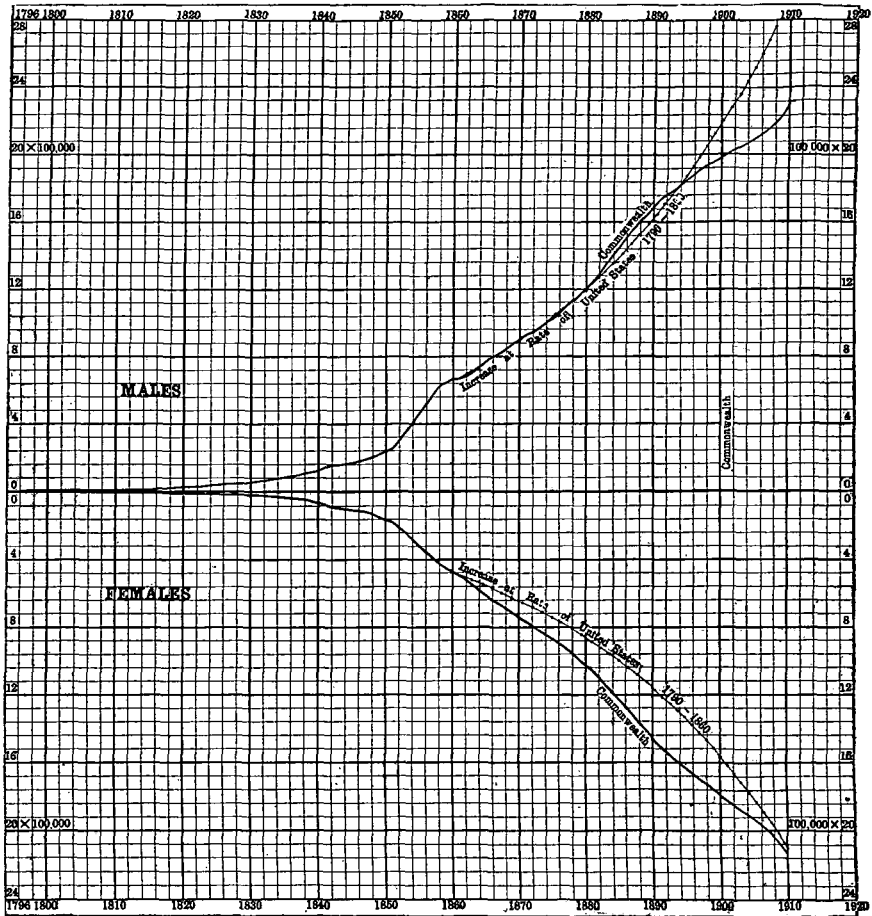
**EXPLANATION OF GRAPHS.**—The base of each small square represents two years' interval for both States and Commonwealth; and the vertical height 80,000 persons for Commonwealth or 20,000 for States. The zero line for the States is the bottom line; for the Commonwealth it is the line marked "Commonwealth." The scale on the left above the Commonwealth zero line relates to the Commonwealth, and that on the right relates to the States.

Where the population falls suddenly the fall denotes the creation of a new colony, e.g., New South Wales 1825, loses the whole population of Tasmania, then erected into a separate colony.

The curves are as follows:—Commonwealth, an unbroken line; New South Wales, — — — Victoria, - - - - -; Queensland, - - - - -; South Australia, - - - - -; Western Australia, - - - - -; Tasmania, - - - - -; the names on the curves also shew which State each represents.

The manner in which the population of the Commonwealth would have grown from 1860 to 1910 if, during that period, there had been in operation the rate of increase actually experienced the United States from 1790 to 1860, is shewn for purposes of comparison.

GRAPHS OF MALE AND FEMALE POPULATIONS, COMMONWEALTH OF  
AUSTRALIA, 1796-1910.

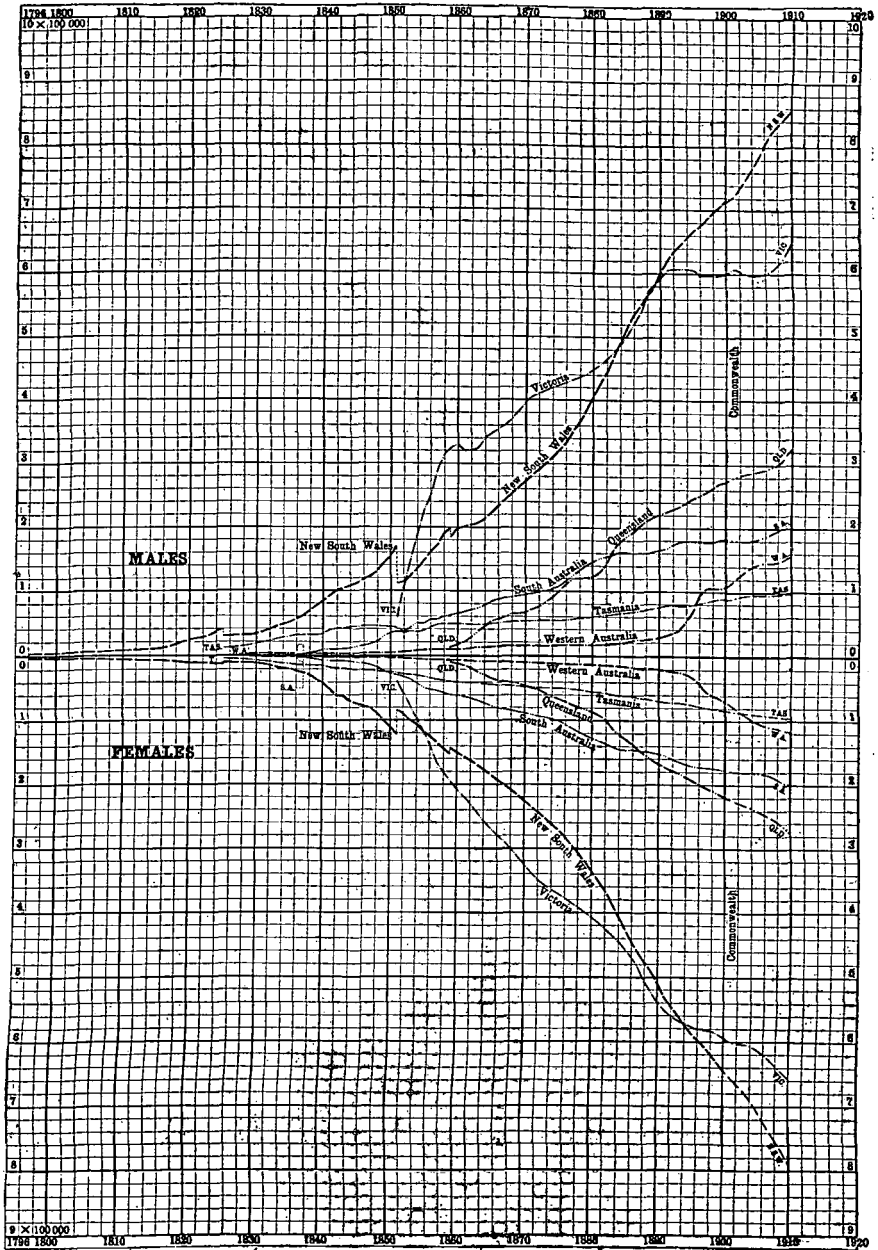


(See Tables pages 126 to 128.)

EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 80,000 persons. The distances upward from the heavy zero line denote the number of males, and downward the number of females. From 1860 onward is shewn, for purposes of comparison, the manner in which the numbers of each sex in the Commonwealth would have grown from 1860 to 1908 (1910 for females), if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860.

The asymmetry of the two graphs reveals the want of uniformity in the increase of the two sexes.

# GRAPHS OF MALE AND FEMALE POPULATION OF THE STATES OF AUSTRALIA, 1796-1910.



(See Tables pages 126 to 128.)

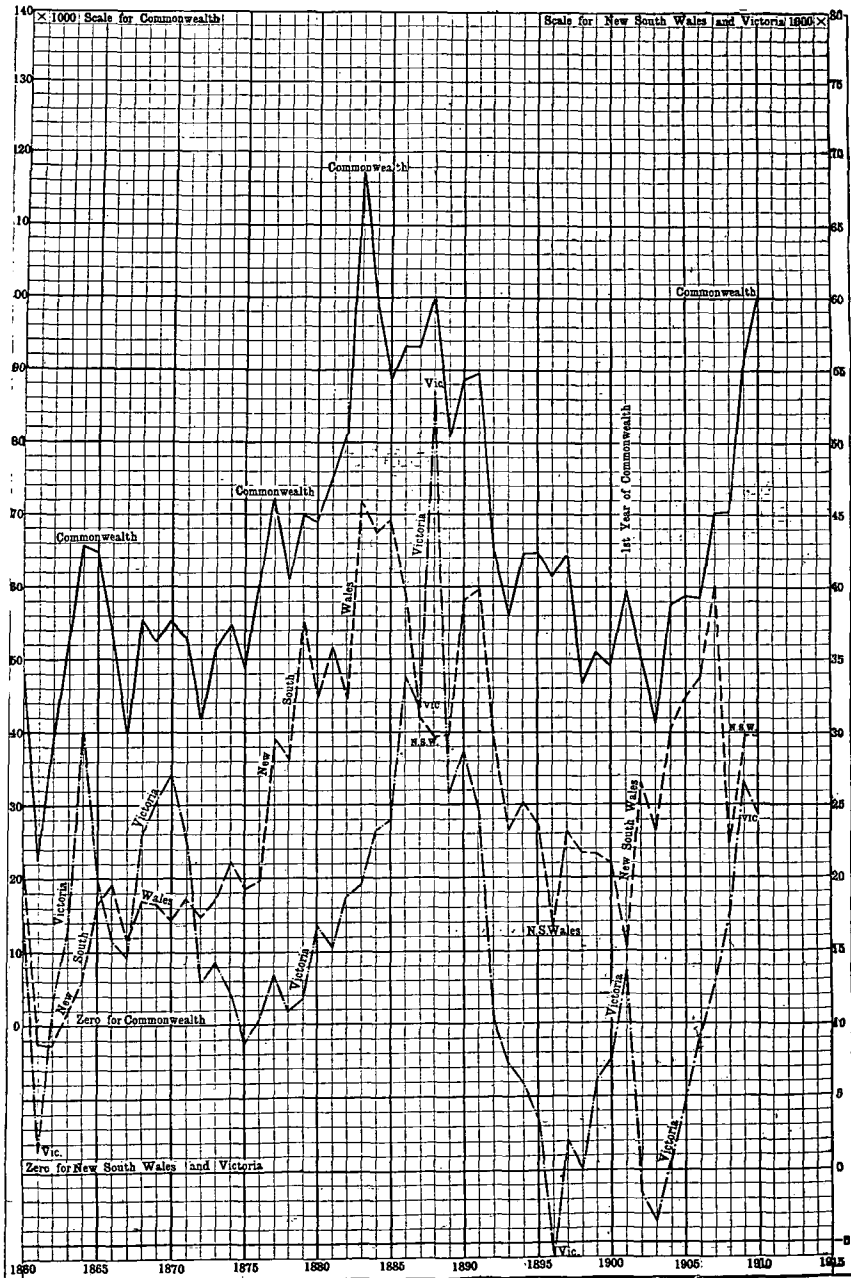
**EXPLANATION OF GRAPHS.**—The base of each small square represents two years' interval, and the vertical height 20,000 persons. The distances upward from the zero line represent the number of males, and downward the number of females.

The sudden falls denote the creation of new colonies.

The names on the curves denote the States to which they refer, and the curves are as follows:—New South Wales, ———; Victoria, - - - - -; Queensland, . . . . .; South Australia, - · - · - ·; Western Australia, - - - - -; Tasmania, ————.

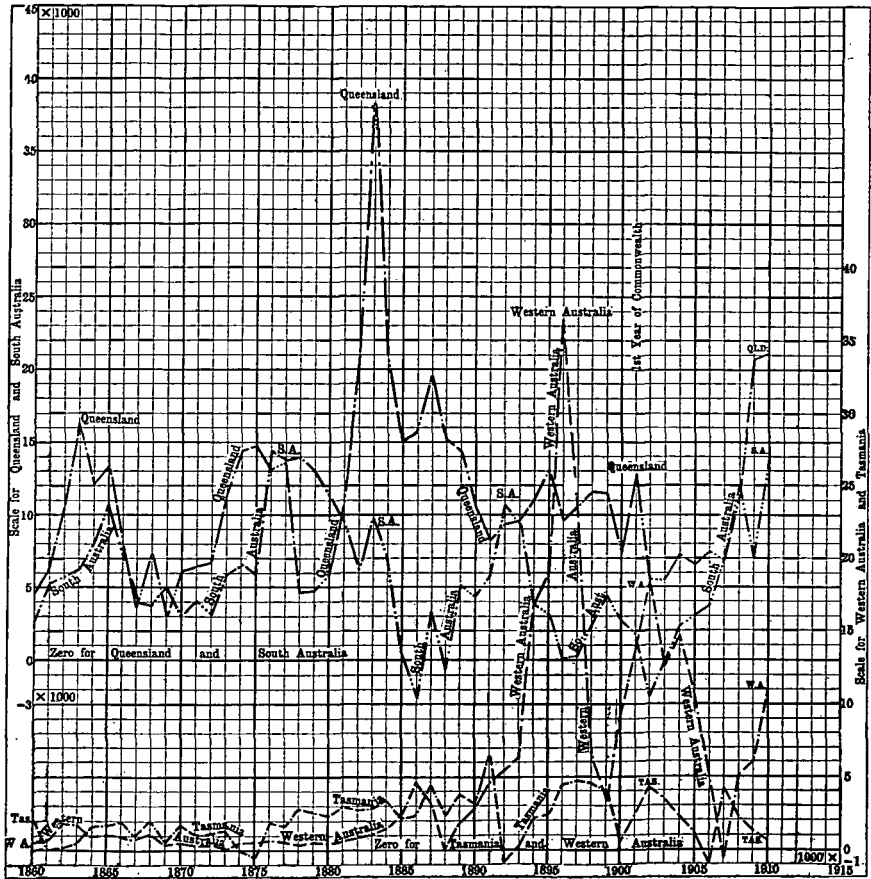
The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND THE STATES OF NEW SOUTH WALES AND VICTORIA, 1860-1910.



(For explanation see foot of next page.)

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE STATES OF QUEENSLAND, LAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1910.



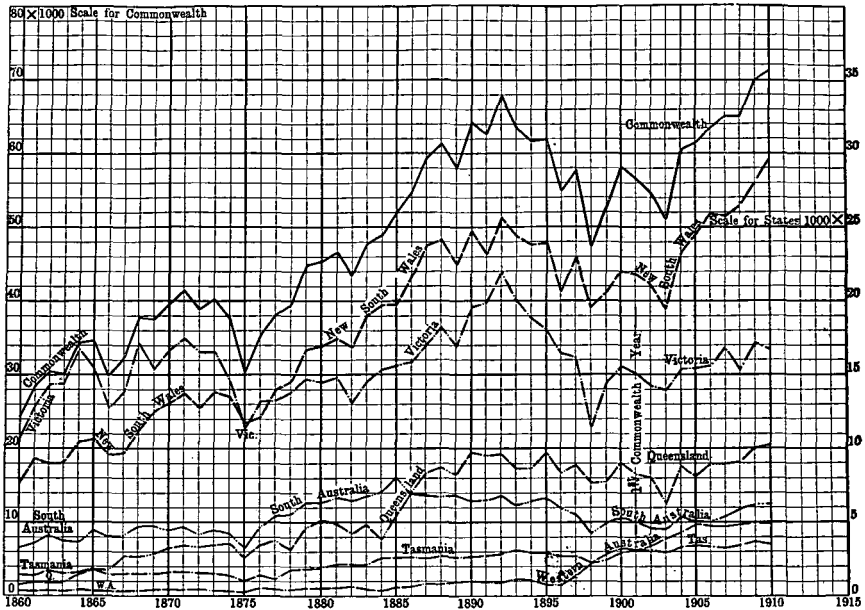
EXPLANATION OF GRAPHS SHEWING NET INCREASE.—The base of each small square represents an interval of a year for both States and Commonwealth; the vertical height represents 2000 for the Commonwealth and 1000 for the States. In the first graph two zero lines are taken (i.) for the Commonwealth and (ii.) for New South Wales and Victoria. The scale on the left relates to the Commonwealth and that on the right relates to New South Wales and Victoria. In the second graph two zero lines are taken (i.) for Queensland and South Australia, and (ii.) for Tasmania and Western Australia. The scale on the left relates to Queensland and South Australia, and that on the right relates to Tasmania and Western Australia.

NET DECREASES in population are shown by carrying the graph in such cases below the zero line, the distance of the graph below the zero line indicating the extent of the decrease.

The lines used are as follows:—Commonwealth, an unbroken line; New South Wales, — — — —; Victoria, — — — —; Queensland, — — — —; South Australia, — — — —; Western Australia, — — — —; Tasmania, — — — —.

The names on the curves denote the States to which they refer.

GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH  
AND STATES OF AUSTRALIA, 1860-1910.

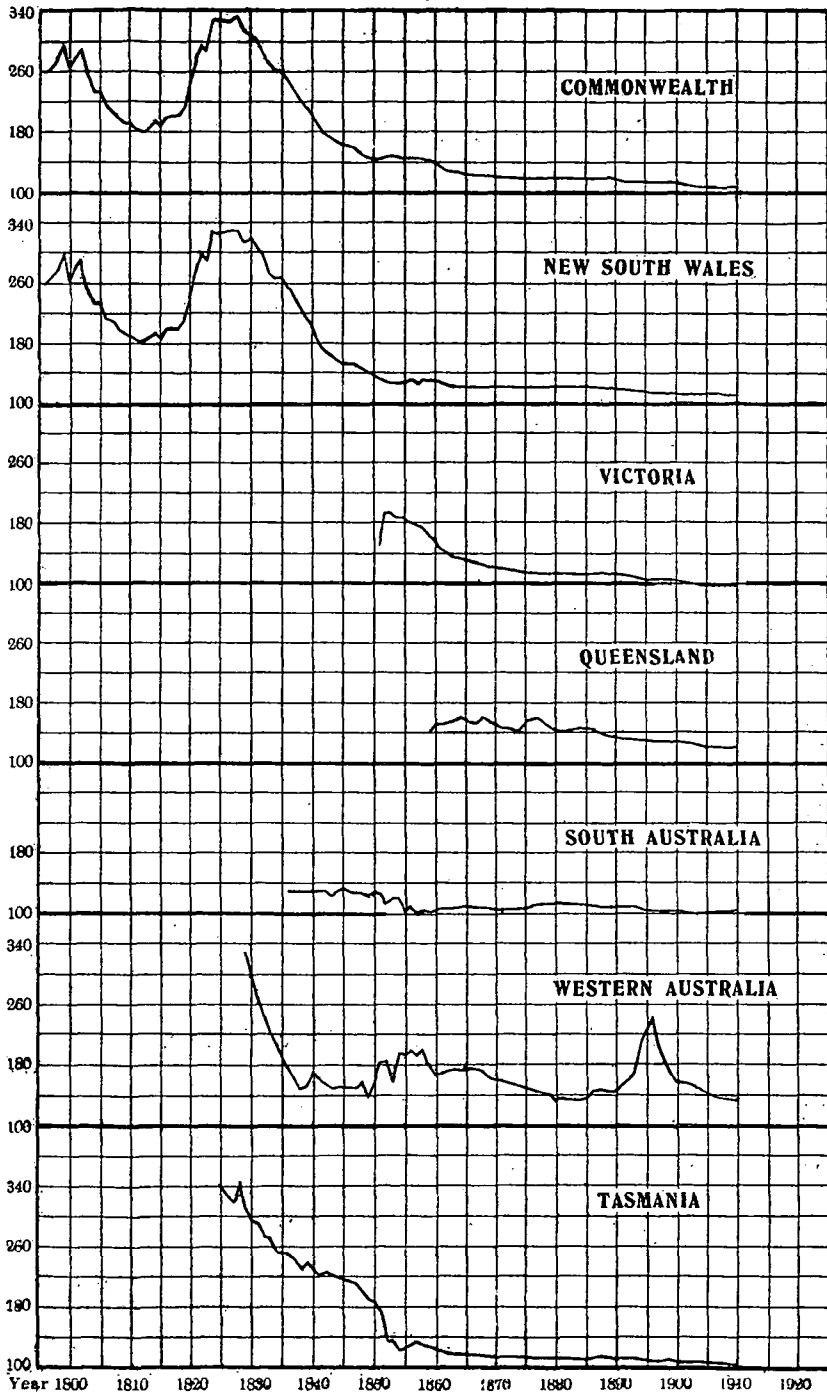


EXPLANATION OF GRAPHS.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1000 persons for the States and 2000 persons for the Commonwealth.

The distances upward from the zero line, marked 0 for both Commonwealth and States, denote the excess of births over deaths. The scale on the left relates to the Commonwealth, and that on the right to the States. The names shew the States to which the curves refer, they are as follows:—Commonwealth — ; New South Wales, — — — ; Victoria, — — — — ; Queensland, — — — — — ; South Australia, — — — — — — ; Western Australia, — — — — — — — ; Tasmania, — — — — — — — — .



GRAPHS SHEWING MASCULINITY OF THE COMMONWEALTH AND STATES  
OF AUSTRALIA, 1796-1910,



(See Tables pages 123 and 129.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of five years and the vertical height an excess of forty per cent. of males over females. The basic lines (shewn thickened) for Commonwealth and all the States are at 100 per cent., equivalent to a numerical equality of the sexes.

# DISTRIBUTION OF POPULATION THROUGHOUT THE COMMONWEALTH OF AUSTRALIA, ACCORDING TO CENSUS OF 1911.

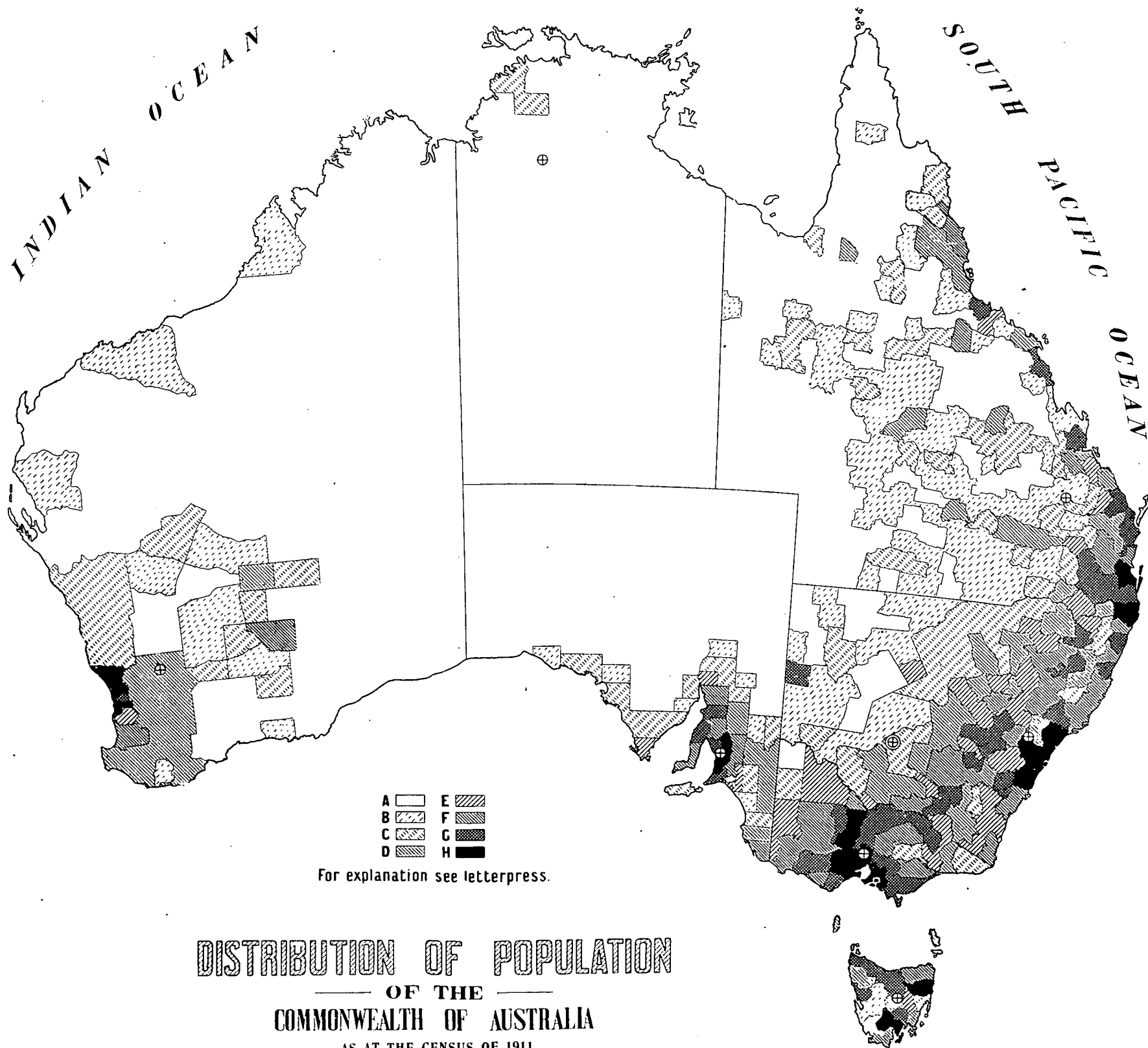
The folding map opposite furnishes a graphic representation of the distribution of the population of the Commonwealth at the date of the census of 1911. For this purpose the density of the population has been computed for the counties of each State, and the areas representing these counties have been shaded in accordance with the following scale of density:—

A—Less than 1 inhabitant to 16 sq. miles							
B—From 1 inhabitant in 16 sq. miles to less than 1 in 4 sq. miles							
C—	"	1	"	4	"	"	1 in 1 sq. mile
D—	"	1	"	1 sq. mile	"	2 in 1	"
E—	"	2 inhabitants in 1	"	"	"	4 in 1	"
F—	"	4	"	1	"	"	8 in 1
G—	"	8	"	1	"	"	16 in 1
H—16 inhabitants and upwards in 1 square mile							

A map drawn upon such a small scale must, of course, be considered as furnishing only a rough approximation as to the true distribution of the population, owing to the fact that a small densely-populated area may exist in certain cases within a comparatively large district, the balance of which is but sparsely populated. Thus, in such a case, owing to the density of the whole district being alone taken into account, the fact of a concentration of population within a small area is lost for purposes of representation. It is evident that the larger the district is for which the density has been calculated, the less will the map represent the true facts. It is, however, believed that by the calculations being made in each State for counties this feature has been minimised, as the areas of the counties of New South Wales, Victoria, Queensland, South Australia, and Tasmania are fairly equal in area, and do not average much more than 2000 square miles. The areas of counties in the Northern Territory and in Western Australia average 4000 and 8000 square miles respectively. It is evident that, so far as the States of Queensland, Western Australia, and Tasmania are concerned, the map now published cannot be compared with the map contained in previous issues of this Year Book, as the density had been computed for that map for Registration Districts in Queensland, Magisterial Districts in Western Australia, and Electoral Districts in Tasmania.

An area of about 1,136,000 square miles, equal to 38 per cent. of the total area of the Commonwealth, and belonging to South Australia, Western Australia, and the Northern Territory, is not subdivided into counties. As the total population of that area is under 5000, it appears white on the map, together with a considerable number of adjoining counties, in which the population is less than one inhabitant to 16 square miles.

The concentration of population about the capitals, and, to a lesser extent, about some mining and agricultural centres, is obvious on reference to the map. The centres of gravity of the population of the several States and of the Commonwealth as a whole have been ascertained, and are shewn in the map by crosses surrounded by circles. It is evident that the greater the percentage of the population of a State concentrated in the immediate neighbourhood of its capital, the closer to the capital the centre of gravity will be located, and the map shews this plainly. The centre of gravity of the population of the whole Commonwealth lies within the State of New South Wales, in county Nicholson, practically on the parallel of Sydney and the meridian of Melbourne, and almost in the centre of a straight line joining Sydney and Adelaide.



Australia became greater than that of Tasmania in 1899. Its density is little more than half of that of South Australia, one-third of that of Queensland, one-nineteenth of that of New South Wales, and about one-fiftieth of that of Victoria.

The Tasmanian population curve indicates a comparatively slow rate of growth throughout. Its most noticeable feature is a retardation in increase in 1852 and subsequent years, brought about by the discovery of gold on the mainland. The population density of Tasmania is nearly 40 per cent. greater than that of New South Wales, and a little less than half of that of Victoria.

**3. Graphs for Commonwealth of Male and Female Population** (page 158). These curves shew the relative growth of male and female population of the Commonwealth, and it will be seen that the former are far more liable to marked fluctuations than the latter. The curves representing an increase of population on the basis of the United States rate for 1790 to 1860, indicate that on the whole the female rate of increase in the Commonwealth has been a fairly satisfactory one, and that from 1860 to 1893 the same might be said of the male population. From 1893 onwards, however, the male population of the Commonwealth has fallen considerably below this rate, and it may be added that the rapid lowering of the rate of increase of the male population must be regarded as unsatisfactory from a national standpoint.

Although the rate of increase of the female population from 1860 onwards is on the whole very satisfactory, it should be noted that the total number at the beginning of this period was relatively very small, and that from 1894 there is an unsatisfactory falling off in the rate of increase, similar to that experienced in the case of males.

**4. Graphs for each State of Male and Female Population** (page 159).—These graphs, shewing the relative progress in male and female population for each of the States, disclose the fact that in all cases the female population is much less liable to marked fluctuations than the male, and further, that in cases where rapid increases have taken place in the latter a similar, but much more gradual, increase is in evidence in the former, commencing usually, however, somewhat later than in the case of the males. A comparison of the graphs of each of the States with that of the Commonwealth shews that the fluctuations in the latter case are smaller than in the former. This is largely due to internal migrations of the male element of the population, brought about by various causes, amongst which mining developments figure prominently.

**5. Graphs of Natural Increase of Population, Commonwealth and States** (page 162).—The graphs indicate that, with the exception of certain marked variations, the natural increase of the population of the Commonwealth, viz., the excess of births over deaths, advanced with fair rapidity from 1860 to 1892, in which year it attained its maximum, when, however, it fell rapidly till 1898. A subsequent rise to 1900 was followed by a continuous fall for the three years succeeding, viz., to 1903. The recovery shows a fairly rapid rise to 1909, during which year the natural increase was 16.35 per 1000 of mean population; 1910 showed a very slight decrease, the rate falling to 16.29. The years in which the natural increase of the Commonwealth was at its highest were 1865, 1871, 1881, 1892, 1900, 1909, and 1910; and the years of extraordinarily low rates of natural increase were 1866, 1875, 1882, 1898, and 1903. The low rate of 1898 was due in large measure to a phenomenally high death rate experienced in practically all the States in that year, when an epidemic of measles was prevalent throughout the Commonwealth. The low rate of 1903 was brought about by the low birth rates and high death rates which accompanied the drought of 1902-3, while the advance in the rate of natural increase since 1903 has been collateral with the marked improvement in material conditions experienced throughout the Commonwealth during that period.

**6. Graphs shewing Net Increase of Population** (pages 160 and 161).—The graphs disclose the fact that the most notable years of large net increases of population of the

Commonwealth as a whole were 1864, 1877, 1883, 1888, 1909, and 1910. The highest increase was attained in 1883. The net increase for 1910 was higher than for any year, since 1888. The years in which low net increases were noticeable were 1861, 1867, 1872, 1878, 1889, 1893, 1898, and 1903.

The graph for New South Wales indicates a high net increase of population between 1876 and 1893, advancing to a maximum in 1883, and then declining to 1901. From the latter year onwards to 1907 an advance in the net increase was in evidence, followed by a decline in 1908, and a recovery in 1909, which was maintained in 1910.

Some features of the graph shewing the Victorian net increase are the height attained in 1864, 1870, 1888, and 1901, the smallness of the increase for the years 1861 and 1875, and the decreases for 1896 and 1903.

For Queensland it will be seen that the years of high net increases were 1862, 1875, 1883, 1895, 1901, 1909, and 1910, while the years in which these were at very low level were 1869, 1878, 1891, and 1903.

In South Australia the net increases were exceptionally high in 1865, 1876, 1883, and 1892, 1908, and 1910, and correspondingly low in 1870, 1886, 1896, 1902, and 1903.

In Western Australia the net increase graph indicates no very marked advance until about 1884, from which it rises somewhat rapidly to 1886, and then declines to 1888. This is followed by an exceedingly rapid rise to 1896, and a subsequent fall to 1899, succeeded by a further rise to 1902, and a fall thereafter to 1907, followed by a rise to 1910.

In the case of the Tasmanian graph, indications of a very varied net increase are in evidence, the principal high points being those for the years 1887, 1891, 1897, 1902, and 1907, while actual decreases were experienced in 1874; 1875, 1892, and 1906.

**7. Graphs shewing Masculinity of Population, Commonwealth and States (page 163).**—These graphs furnish information concerning the variations which have taken place in the relative numbers of males and females in the populations of the Commonwealth and the several States during the years 1796 to 1910, and incidentally serve to indicate special features of growth in the respective populations. In general it will be noted that in recent years there has been a marked tendency towards a masculinity of 100, that is, to a condition in which the numbers of males and females in the population were equal, but that with the exception of Victoria in 1902 and subsequent years the masculinity has never fallen below 100. The early experience of the Commonwealth exhibits a fairly rapid decline in masculinity to 1812, followed by an even more rapid rise to 1828 and a subsequent fall with more gentle slope to 1850. From 1850 onwards the decline in masculinity has been fairly continuous though subject to fluctuations. It should be noted that the marked variations of the earlier as compared with the later years have been due to a considerable extent to the fact that, owing to the smallness of the population, any considerable influx of male immigrants had a marked effect in increasing the masculinity of the population, while an influx of female immigrants tended to considerably reduce it. Two points of special interest in the graphs of the separate States are the maxima attained in 1852 in Victoria and 1896 in Western Australia, as the result of extensive male immigration consequent on the gold discoveries in the respective States.

## SECTION V.

## VITAL STATISTICS.

NOTE.—The rates quoted throughout this Section for the years 1902 to 1911 have been calculated in accordance with the corrected populations as determined by the results of the Census of 1911.]

## § 1. Births.

1. Male and Female Births, 1901 to 1910.—The total number of male and female births registered in the Commonwealth during the years 1901 to 1910 is as shewn in the two tables hereunder:—

## TOTAL MALE BIRTHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. <sup>1</sup>	W. Aust.	Tasmania.	C'wealth.
1901 ... ..	19,149	15,876	7,281	4,687	2,946	2,570	52,509
1902 ... ..	19,322	15,583	7,279	4,587	3,241	2,604	52,616
1903 ... ..	18,377	15,115	6,427	4,484	3,433	2,570	50,406
1904 ... ..	19,857	15,313	7,134	4,686	3,666	2,702	53,358
1905 ... ..	20,206	15,523	6,978	4,514	3,862	2,812	53,895
1906 ... ..	21,066	15,716	7,280	4,617	4,043	2,792	55,514
1907 ... ..	21,604	15,986	7,451	4,689	3,962	2,797	56,489
1908 ... ..	21,605	16,071	7,677	4,949	3,993	2,818	57,113
1909 ... ..	22,464	16,096	7,954	5,235	3,884	2,849	58,482
1910 ... ..	23,368	16,412	8,260	5,423	3,855	2,888	60,206

1. Including Northern Territory.

## TOTAL FEMALE BIRTHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. <sup>1</sup>	W. Aust.	Tasmania.	C'wealth.
1901 ... ..	18,726	15,132	7,022	4,424	2,772	2,360	50,436
1902 ... ..	18,513	14,878	6,937	4,360	2,991	2,481	50,160
1903 ... ..	17,589	14,454	6,194	4,024	3,266	2,510	48,037
1904 ... ..	18,810	14,450	6,948	4,447	3,510	2,590	50,755
1905 ... ..	19,295	14,584	6,648	4,354	3,720	2,445	51,046
1906 ... ..	19,882	15,128	6,739	4,329	3,757	2,541	52,376
1907 ... ..	20,597	15,379	7,089	4,549	3,750	2,494	53,858
1908 ... ..	20,853	15,026	7,153	4,841	3,762	2,797	54,432
1909 ... ..	21,318	15,448	7,598	4,856	3,718	2,651	55,589
1910 ... ..	22,076	15,025	7,909	5,157	3,730	2,698	56,595

1. Including Northern Territory.

2. Total Births, 1901 to 1910.—While the total number of births for the Commonwealth was higher in 1910 than in any of the preceding nine years, the following table of particulars discloses also the fact that apart from New South Wales, Queensland, and Western Australia, the excess of births in 1910 over those in 1901 was very small:—

## TOTAL BIRTHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. <sup>1</sup>	W. Aust.	Tas.	C'wealth.
1901 ...	37,875	31,008	14,303	9,111	5,718	4,930	102,945
1902 ...	37,835	30,461	14,216	8,947	6,232	5,085	102,776
1903 ...	35,966	29,569	12,621	8,508	6,699	5,080	98,443
1904 ...	38,667	29,763	14,082	9,133	7,176	5,292	104,113
1905 ...	39,501	30,107	13,626	8,868	7,582	5,257	104,941
1906 ...	40,948	30,844	14,019	8,946	7,800	5,333	107,890
1907 ...	42,201	31,365	14,540	9,238	7,712	5,291	110,347
1908 ...	42,458	31,097	14,830	9,790	7,755	5,615	111,545
1909 ...	43,782	31,544	15,552	10,091	7,602	5,500	114,071
1910 ...	45,444	31,437	16,169	10,580	7,585	5,586	116,801

1. Including Northern Territory.

3. **Birth Rates, 1901 to 1910.**—(i.) *Crude Birth Rate.* The birth rate for the whole Commonwealth was lower in 1910 than in 1901, and New South Wales, South Australia and Tasmania are the only States in which an increase in the rate took place, as will be seen from the following table, which gives also the number of persons per square mile in each State :—

CRUDE BIRTH RATE,<sup>1</sup> COMMONWEALTH, 1901 to 1910.<sup>2</sup>

Year.	N.S.W.	Vic.	Qld.	S.A. <sup>4</sup>	W.A.	Tas.	Cwltth.
1901 ...	27.78	25.77	28.52	25.16	30.39	28.58	27.16
1902 ...	27.23	25.23	27.85	24.82	30.44	29.03	26.71
1903 ...	25.44	24.53	24.53	23.65	30.50	28.16	25.29
1904 ...	26.85	24.74	26.99	25.29	30.67	28.92	26.41
1905 ...	26.85	24.96	25.76	24.36	30.74	28.50	26.23
1906 ...	27.21	25.41	26.15	24.37	30.66	28.94	26.57
1907 ...	27.34	25.59	26.79	24.86	30.18	28.63	26.76
1908 ...	26.99	25.07	26.79	25.65	30.08	29.95	26.59
1909 ...	27.40	25.01	27.29	25.74	28.87	28.91	26.69
1910 ...	27.83	24.51	27.33	26.38	27.99	29.25	26.73
Density <sup>3</sup> (No. per square mile)	5.30	14.81	0.89	0.45	0.28	7.99	1.49

1. Number of Births per 1000 of the mean annual population.

2. Rates corrected in view of Census Returns, 1911.

3. On 31st December, 1910.

4. Including Northern Territory.

The population density of each State and of the Commonwealth has been given for the purpose of considering the influence, if any, of concentration of population on birth-rate, in connection with the disparities of the rate in different parts of Australia.

(ii.) *Objections to Crude Birth Rate.* The figures just given represent the "crude birth rate," i.e., the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, i.e., from 15 to 45, would furnish a more significant rate. To calculate this, would, of course, involve assumptions concerning the variations of the age and sex constitution of the population since the Census of 1901. Calculations of this nature at the present time would be subject to so large an uncertainty that it has been decided to defer computing the rates of fecundity and fertility on other and better bases until the results of the Census of 1911 are available. The calculation has, however, been made for the last three Census periods, and covers in each case the Census year together with the year immediately preceding and the year immediately following. The following results have been obtained:—Total births per 1000 women (married and unmarried) of ages 15 to 45 :—

Years 1880-82, 169.69; years 1890-92, 158.81; years 1900-02, 117.26. Nuptial births per 1000 married women of ages 15 to 45:—Years 1880-82, 320.96; 1890-92, 332.03; years 1900-02, 235.84.

4. **Birth Rates of Various Countries.**—A comparison with other countries shows that the Australian States occupy a very low position, which is, however, fortunately counterbalanced by a still lower position in regard to their death rates, as will be seen from the table hereinafter in the section dealing with "Deaths."

#### CRUDE BIRTH RATE<sup>1</sup> OF VARIOUS COUNTRIES.<sup>2</sup>

Country.	Year.	Rate.	Country.	Year.	Rate.
Russia, European ...	1903	48.1	Western Australia ...	1910	28.0
Rumania ...	1909	41.7	New South Wales ...	1910	27.8
Bulgaria ...	1908	40.4	Queensland ...	1910	27.3
Chile ...	1909	38.8	Switzerland ...	1908	27.1
Jamaica ...	1909	37.8	Commonwealth ...	1910	26.7
Hungary ...	1909	37.0	South Australia ...	1910	26.4
Ceylon ...	1909	36.7	Scotland ...	1909	26.4
Servia ...	1909	36.5	United Kingdom ...	1908	26.3
Japan ...	1908	33.9	New Zealand ...	1910	26.2
Austria ...	1908	33.5	Norway ...	1909	26.1
Spain ...	1909	32.6	England and Wales ...	1909	25.6
Italy ...	1909	32.4	Sweden ...	1909	25.6
German Empire ...	1908	32.1	Canada (Ontario) ...	1908	24.9
Prussia ...	1909	31.8	Belgium ...	1908	24.9
Finland ...	1909	31.3	Victoria ...	1910	24.5
Tasmania ...	1910	29.3	Ireland ...	1909	23.5
Netherlands ...	1909	29.1	France ...	1909	19.6
Denmark ...	1909	28.0			

1. Number of births per 1000 of the mean population.

2. Rates corrected in view of Census Returns, 1911.

5. **Masculinity at Birth.**—The masculinity of births, *i.e.*, the number of males per 100 females, registered during the last ten years in the several States of the Commonwealth has varied from 100.75 in Tasmania in 1908 to 115.01 in Tasmania in 1905. The following table, which gives the values for the States and Commonwealth for 1901 to 1910, shews the remarkable fact that for the Commonwealth there was a steady increase of masculinity from 1901 to 1906, with a sharp decrease in 1907, a further increase in 1908 and 1909, and a sharp increase in 1910:—

#### MASCULINITY<sup>1</sup> OF BIRTHS REGISTERED, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	102.26	104.92	103.69	105.94	106.28	108.90	104.11
1902 ...	104.37	104.74	104.93	105.21	108.36	104.96	104.90
1903 ...	104.48	104.57	103.76	111.43	105.11	102.39	104.93
1904 ...	105.57	105.97	102.68	105.37	104.44	104.32	105.13
1905 ...	104.72	106.44	104.96	103.67	103.82	115.01	105.58
1906 ...	105.96	103.89	108.03	106.65	107.61	109.88	105.99
1907 ...	104.89	103.95	105.11	103.08	105.65	112.15	104.89
1908 ...	103.61	106.95	107.33	102.23	106.14	100.75	104.93
1909 ...	105.38	104.19	104.69	107.80	104.46	107.47	105.20
1910 ...	105.85	109.23	104.44	105.16	103.35	107.04	106.39

1. Number of males to each 100 females.

There is ordinarily a very small difference between the masculinity of nuptial and ex-nuptial births. Thus, according to Bodio, whose figures are quoted in the following



table, for the period about 1887-1891, the masculinity ranged from 108.3 to 103.6, and from 107.9 to 101.6 for total and ex-nuptial births respectively.

### MASCULINITY OF BIRTHS IN VARIOUS COUNTRIES.

Country.	Masculinity of Births. <sup>1</sup>		Country.	Masculinity of Births. <sup>1</sup>	
	All Live Births.	Ex-nuptial Live Births.		All Live Births.	Ex-nuptial Live Births.
Spain ...	108.3	107.9	German Empire ...	105.2	104.7
Rumania ...	107.7	103.4	Finland ...	105.0	105.2
Portugal ...	107.5	106.4	Hungary ...	105.0	102.9
Austria ...	105.8	105.5	Sweden ...	105.0	104.3
Italy ...	105.8	104.4	Denmark ...	104.8	105.0
Norway ...	105.8	105.9	Servia ...	104.7	103.5
Ireland ...	105.5	104.8	France ...	104.6	102.9
Netherlands ...	105.5	104.7	Belgium ...	104.5	102.2
Scotland ...	105.5	105.9	Switzerland ...	104.5	101.6
Russia, European ...	105.4	104.5	England ...	103.6	104.4

1. Number of males to each 100 females.

The masculinity of ex-nuptial births in the Commonwealth was as follows:—

### MASCULINITY<sup>1</sup> OF EX-NUPTIAL BIRTHS REGISTERED, COMMONWEALTH,

1901 TO 1910.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901 ...	108.46	102.22	107.84	100.56	100.00	102.07	105.50
1902 ...	103.67	106.78	100.23	106.91	111.11	93.17	103.96
1903 ...	97.79	114.83	95.22	100.00	114.29	122.66	104.10
1904 ...	100.80	108.68	95.77	83.50	107.28	93.71	100.98
1905 ...	102.50	102.52	105.63	96.94	98.75	102.80	102.44
1906 ...	103.10	102.23	104.17	116.97	118.13	124.92	105.44
1907 ...	104.91	105.59	100.90	113.56	115.94	100.00	105.11
1908 ...	108.60	105.38	96.83	97.30	89.33	108.51	104.00
1909 ...	105.46	102.16	103.90	104.81	129.14	129.01	106.25
1910 ...	104.96	103.59	100.39	102.62	89.70	106.94	103.05

1. Number of males to each 100 females.

It is curious to note that while, so far as the total births are concerned, there has always been an excess of male births over female births, this has not been the case in regard to ex-nuptial births, where in South Australia in 1904 the masculinity was only 83.50. On the other hand it rose as high as 129.14 in Western Australia in 1909. Little weight, however, can be attached to these results on account of the small totals on which they are based.

6. **Ex-nuptiality of Births.**—The total ex-nuptial births fell from 1901 to 1903, then rose rapidly to 1908 and remained almost stationary till 1909, when the number again decreased. The total for 1910 was the lowest number recorded since 1906. See the table on the following page.

It is, of course, possible that the number of ex-nuptial births is somewhat understated, owing to diffidence in proclaiming the fact of ex-nuptiality, and it is not unlikely that the majority of unregistered births are ex-nuptial.

**TOTAL EX-NUPTIAL BIRTHS REGISTERED IN THE COMMONWEALTH, 1901 to 1910.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901 ...	2,712	1,729	848	361	222	293	6,165
1902 ...	2,497	1,677	859	389	247	311	5,980
1903 ...	2,413	1,695	857	354	315	285	5,919
1904 ...	2,755	1,707	971	367	313	308	6,421
1905 ...	2,912	1,689	950	386	318	290	6,545
1906 ...	2,882	1,721	1,076	358	373	308	6,718
1907 ...	2,920	1,764	1,117	378	298	306	6,783
1908 ...	2,887	1,793	1,118	438	337	294	6,867
1909 ...	2,821	1,870	1,097	426	346	300	6,860
1910 ...	2,853	1,759	1,034	464	313	298	6,721

(i.) *Rate of Ex-nuptiality, 1901 to 1910.* The rate of ex-nuptiality, i.e., the percentage of ex-nuptial to total births, shews on the whole a slight increase from 1901 to 1905; with a decrease during the last five years, as the subjoined table shews:—

**PERCENTAGE OF EX-NUPTIAL ON TOTAL BIRTHS, COMMONWEALTH, 1901 to 1910.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth
	%	%	%	%	%	%	%
1901 ...	7.16	5.58	5.93	3.96	3.88	5.94	5.99
1902 ...	6.60	5.51	6.04	4.35	3.96	6.12	5.82
1903 ...	6.71	5.73	6.79	4.16	4.70	5.61	6.01
1904 ...	7.12	5.74	6.90	4.02	4.36	5.82	6.17
1905 ...	7.37	5.61	6.97	4.35	4.19	5.52	6.24
1906 ...	7.04	5.58	7.68	4.00	4.78	5.78	6.23
1907 ...	6.92	5.62	7.68	4.09	3.86	5.78	6.15
1908 ...	6.80	5.77	7.54	4.47	4.35	5.24	6.16
1909 ...	6.44	5.94	7.05	4.22	3.95	5.45	6.01
1910 ...	6.28	5.59	6.39	4.38	4.13	5.33	5.84

A comparison of greater significance would be obtained by calculating the number of ex-nuptial births per thousand of the single and widowed female population between the ages of 15 and 45, but until the Census of 1911 has once more shewn the composition of the population, such a calculation would be liable to considerable error, and will, therefore, be deferred. The calculation has, however, been made for the three last Census periods, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The number of ex-nuptial births per 1000 unmarried women of ages 15 to 45 has been found to be as follows:—Years 1880-82, 14.49; years 1890-92, 15.93; years 1900-02, 13.30.

(ii.) *Causes of Increase.* Since the rate of ex-nuptiality might appear to increase by the mere decrease in the general birth rate, the following table has been prepared:—

**CRUDE EX-NUPTIAL, NUPTIAL, AND TOTAL BIRTH RATES,<sup>1</sup> COMMONWEALTH, 1901 TO 1910.<sup>2</sup>**

Births.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Ex-nuptial ...	1.63	1.55	1.52	1.63	1.64	1.65	1.64	1.64	1.60	1.54
Nuptial ...	25.53	25.16	23.77	24.78	24.59	24.92	25.12	24.95	25.09	25.19
Total ...	27.16	26.71	25.29	26.41	26.23	26.57	26.76	26.59	26.69	26.73

<sup>1</sup> Number of births per 1000 of mean population.

<sup>2</sup> Rates corrected in view of Census Returns, 1911.

(iii.) *Ex-nuptiality—Rates of Various Countries.* The rate for the Commonwealth is higher than that for England and Wales, slightly lower than that for Scotland, and considerably below the rates for many of the countries for which returns are available, as the table hereunder shews. The rates shewn below refer to three triennial periods, 1880-2, 1890-2, and 1900-2, and are given per thousand of the unmarried and widowed female population:—

**EX-NUPTIAL BIRTHS PER THOUSAND OF UNMARRIED AND WIDOWED FEMALE  
POPULATION IN VARIOUS COUNTRIES.**

Country.	Rate.			Country.	Rate.		
	1880-2.	1890-2.	1900-2.		1880-2.	1890-2.	1900-2.
	%	%	%		%	%	%
Ireland ...	4.4	3.9	3.8	Belgium ...	20.0	20.6	17.8
Netherlands ...	9.7	9.0	6.8	France ...	17.6	17.7	19.1
England and Wales ...	14.1	10.5	8.5	Italy ...	25.4	...	19.4
New Zealand ...	13.4	9.0	8.9	Russia ...	25.8	25.1	23.7
Switzerland ...	10.8	10.0	9.8	Denmark ...	26.9	24.5	24.2
Commonwealth ...	14.5	15.9	13.3	Sweden ...	22.6	22.9	24.3
Scotland ...	21.4	17.1	13.4	German Empire ...	29.6	28.7	27.4
Spain ...	16.0	17.5	15.5	Austria ...	43.4	42.7	40.1
Norway ...	19.7	16.9	17.2				

It may be added that the general circumstances in Australia with regard to opportunity for marriage are probably relatively easy as compared with those in older established countries.

**7. Multiple Births.**—Among the total number of 116,801 births registered in the Commonwealth in 1910 there were 114,420 single births, 2342 twins, and 39 triplets. The number of cases of twins was 1176, ten children being still-born, and the number of cases of triplets 13. The total number of mothers was, therefore, 115,609, the proportion of mothers of twins being one in every 98, and of mothers of triplets one in every 8893 of total mothers. The proportion of multiple births is a fairly constant one. In 1907 they numbered 1043 out of a total of 109,306, or one in 105; in 1908, 1065, or one in 104; in 1909, 1142, or one in 99; and in 1910, 1189, or one in 99. The number of cases of triplets is so small that a slight alteration in the total will completely change the proportion. Thus, there were 14 cases in 1907, or one in 7872 of total mothers, as compared with one in 18,415 in 1908; one in 8066 in 1909, and one in 8893 in 1910.

**8. Ages of Parents.**—The relative ages of the parents of children registered in 1910 have been tabulated, twins and triplets being distinguished from single births, and are shewn for single ages and for every State in "Bulletin of Population and Vital Statistics, No. 25; Vital Statistics of the Commonwealth for the Year 1910." In the present work the exigencies of space allow only the insertion of corresponding tables shewing the relative ages of parents in groups of five years. It will be seen from the tables that the largest number both of single and of twin births occurred where the ages of both father and mother were between 25 and 29. The largest number of mothers was found at ages 25 to 29.

## (a) AGES OF PARENTS IN CASES OF SINGLE BIRTHS, COMMONWEALTH, 1910.

Age.	Total Fathers.	Ages of Mothers.								Not Stated.
		Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and Upwds.	
Ages of Fathers.										
Under 20 ...	352	1	214	129	8	...	...	...	...	...
20 to 24 ...	10,827	5	2,090	7,087	1,457	160	18	7	...	3
25 to 29 ...	25,716	...	1,121	10,493	11,729	2,061	279	29	...	4
30 to 34 ...	25,771	...	298	4,463	10,679	8,777	1,428	115	5	6
35 to 39 ...	20,963	...	105	1,461	5,014	7,835	5,900	631	15	2
40 to 44 ...	13,870	...	39	487	1,680	3,821	5,267	2,498	74	4
45 to 49 ...	7,149	...	18	170	623	1,251	2,594	2,187	306	...
50 to 54 ...	2,296	...	4	51	134	393	690	623	200	1
55 to 59 ...	583	...	...	10	48	113	160	176	76	...
60 to 64 ...	168	...	...	6	19	38	46	49	10	...
65 & upwards ...	95	...	...	1	12	21	31	22	8	...
Not stated ...	13	...	...	1	1	4	6	...	...	1
Mothers of nuptial children ...	107,803	6	3,889	24,359	31,401	24,474	16,419	6,537	694	21
Mothers of ex-nuptial children ...	6,617	23	1,801	2,545	1,146	569	324	142	20	47
Total mothers ...	114,420	29	5,690	26,904	32,550	25,043	16,743	6,679	714	68

## (b) AGES OF PARENTS OF TWINS, COMMONWEALTH, 1910.

Age.	Total Fathers.	Ages of Mothers.							45 & up-wards.
		Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 & up-wards.	
Ages of Fathers.									
Under 20 ...	2	2	...	...	...	...	...	...	...
20 to 24 ...	74	8	48	17	1	...	...	...	...
25 to 29 ...	226	3	65	131	25	2	...	...	...
30 to 34 ...	281	...	33	100	124	21	3	...	...
35 to 39 ...	219	...	9	42	81	80	7	...	...
40 to 44 ...	184	...	2	10	43	99	29	1	...
45 to 49 ...	107	...	1	8	16	49	30	3	...
50 to 54 ...	18	...	...	...	5	5	5	...	...
55 to 59 ...	8	1	...	...	1	3	2	1	...
60 to 64 ...	4	...	...	...	1	1	2	...	...
65 and upwards ...	1	...	...	...	...	...	1	...	...
Not stated ...	1	...	1	...	...	...	...	...	...
Mothers of nuptial twins ...	1,125	14	159	308	297	263	79	5	...
Mothers of ex-nuptial ..	51	8	16	13	9	4	1	...	...
Total mothers ...	1,176	22	175	321	306	267	80	5	...

## (c) AGES OF PARENTS OF TRIPLETS, COMMONWEALTH, 1910.

Age.	Total Fathers.	Ages of Mothers.				
		20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.
Ages of Fathers.						
20 to 24 ...	1	1	...	...	...	...
25 to 29 ...	4	...	2	1	1	...
30 to 34 ...	1	...	...	1	...	...
35 to 39 ...	2	...	...	1	1	...
40 to 44 ...	2	...	...	...	...	2
45 to 49 ...	1	...	1	...	...	...
50 to 54 ...	1	...	...	...	1	...
Mothers of nuptial triplets ...	12	1	3	3	3	2
Mothers of ex-nuptial triplets ...	1	1	...	...	...	...
Total mothers ...	13	2	3	3	3	2

9. **Birthplaces of Parents.**—The relative birthplaces of the parents of children whose births were registered during the year 1910 will be found tabulated in the Bulletin before-mentioned. A summary of the results of the tabulation is here given:—

**BIRTHPLACES OF PARENTS OF CHILDREN, COMMONWEALTH, 1910.**

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.
New South Wales ...	33,520	322	5	36,396	369	4	2,608	17	...
Victoria ...	29,493	304	2	30,296	323	3	1,732	11	1
Queensland ...	8,693	75	...	11,147	87	...	880	9	...
South Australia ...	11,463	141	2	11,958	134	2	512	3	...
Western Australia ...	1,286	12	...	1,651	16	...	100	1	...
Tasmania ...	4,996	51	...	5,255	46	...	353	4	...
New Zealand ...	1,262	12	...	1,077	20	1	47	2	...
Austria-Hungary ...	86	1	...	34	1	...	4	...	...
Belgium ...	6	...	...	1	...	...	...	...	...
Bulgaria ...	1	...	...	...	...	...	...	...	...
Channel Islands ...	26	1	...	6	...	...	...	1	...
Denmark ...	212	1	...	67	...	...	3	1	...
England ...	8,911	122	1	5,473	69	1	188	2	...
Finland ...	24	...	...	6	...	...	...	...	...
France ...	56	...	...	19	...	...	...	...	...
Germany ...	995	15	...	541	8	...	12	...	...
Gibraltar ...	3	...	...	1	...	...	...	...	...
Greece ...	38	1	...	11	...	...	...	...	...
Iceland ...	2	...	...	...	...	...	...	...	...
Ireland ...	2,310	17	1	1,477	7	1	40	...	...
Isle of Man ...	23	1	...	15	...	...	...	...	...
Italy ...	243	1	...	145	1	...	5	...	...
Malta ...	7	...	...	2	...	...	1	...	...
Netherlands ...	13	...	...	1	...	...	...	...	...
Norway ...	100	1	...	27	1	...	2	...	...
Portugal ...	4	...	...	...	...	...	1	...	...
Rumania ...	8	...	...	3	...	...	...	...	...
Russia ...	109	2	...	60	2	...	...	...	...
Scotland ...	2,125	23	1	1,233	25	...	47	...	...
Spain ...	15	...	...	4	...	...	...	...	...
Sweden ...	210	3	...	28	2	...	1	...	...
Switzerland ...	34	...	...	17	...	...	1	...	...
Turkey ...	14	...	...	10	...	...	...	...	...
Wales ...	312	2	...	187	2	...	5	...	...
Canada ...	75	1	...	27	2	...	2	...	...
Mexico ...	1	...	...	1	...	...	...	...	...
Newfoundland ...	...	...	...	2	...	...	...	...	...
United States ...	218	4	...	91	4	...	3	...	...
Bermudas ...	3	...	...	2	...	...	...	...	...
Central America ...	...	...	...	1	...	...	...	...	...
West Indies ...	17	...	...	4	...	...	...	...	...
Argentine Republic ...	3	...	...	...	...	...	...	...	...
Brazil ...	1	...	...	...	...	...	...	...	...
Chile ...	2	...	...	4	...	...	...	...	...
S. America, so described	11	...	...	4	...	...	1	...	...
Uruguay ...	...	...	...	1	...	...	...	...	...

## BIRTHPLACES OF PARENTS OF CHILDREN—Continued.

Birthplace.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.
Afghanistan ...	4	...	...	...	...	...	...	...	...
Arabia ...	3	...	...	1	...	...	...	...	...
Asia Minor ...	2	...	...	1	...	...	...	...	...
Baluchistan ...	1	...	...	...	...	...	...	...	...
Burmah ...	2	1	...	1	...	...	...	...	...
Ceylon ...	18	...	...	6	...	...	...	...	...
China ...	178	...	...	66	...	...	4	...	...
Cochin China ...	1	...	...	...	...	...	...	...	...
Cyprus ...	1	...	...	1	...	...	...	...	...
Dutch East Indies ...	5	...	...	3	...	...	...	...	...
India ...	167	5	...	89	...	...	3	...	...
Japan ...	20	...	...	7	...	...	3	...	...
Malay States ...	1	...	...	...	...	...	...	...	...
Persia ...	1	...	...	1	...	...	...	...	...
Philippine Islands ...	7	...	...	2	...	...	1	...	...
Siam ...	1	...	...	...	...	...	...	...	...
Straits Settlements ...	9	...	...	3	...	...	...	...	...
Syria ...	116	3	...	100	4	...	...	...	...
Africa, so described ...	...	...	...	2	...	...	...	...	...
Cape of Good Hope ...	11	...	...	12	...	...	1	...	...
Egypt ...	6	...	...	3	...	...	...	...	...
Madagascar ...	1	...	...	...	...	...	...	...	...
Madeira ...	1	...	...	...	...	...	...	...	...
Mauritius ...	21	...	...	7	...	...	...	...	...
Natal ...	2	...	...	5	...	...	...	...	...
St. Helena ...	2	...	...	...	...	...	...	...	...
S. Africa, so described	59	...	...	67	1	...	1	...	...
Transvaal ...	1	...	...	1	...	...	1	...	...
Fanning Islands ...	...	...	...	1	...	...	...	...	...
Fiji ...	22	...	...	19	...	...	1	...	...
Friendly Islands ...	1	...	...	...	...	...	...	...	...
Hawaii ...	2	...	...	...	...	...	...	...	...
New Caledonia ...	14	...	...	10	...	...	3	...	...
New Hebrides ...	4	...	...	...	...	...	...	...	...
Samoa ...	3	...	...	1	...	...	...	...	...
South Sea Islands, so described	19	...	...	1	...	...	...	...	...
Born at sea ...	139	2	...	81	...	...	4	...	...
Birthplace not stated	27	1	...	27	1	...	47	...	...
Total ...	107,803	1,125	12	107,803	1,125	12	6,617	51	1

10. Occupations of Fathers.—A summary of the occupations of the fathers of all nuptial children, whose births were registered in 1910, will be found in the following table. The figures include all the States of the Commonwealth:—

## OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN, COMMONWEALTH, 1910.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
<b>CLASS I.—PROFESSIONAL.</b>			
General Government ... ..	593	Wool and Tallow ... ..	63
Local Government ... ..	109	Hay, Corn, etc. ... ..	255
Defence ... ..	114	Other Vegetable Matter ... ..	186
Law and Order ... ..	1,146	Wood and Coal ... ..	201
Religion ... ..	339	Glass and Earthenware ... ..	26
Charities ... ..	3	Gold, Silver, and Precious Stones ... ..	10
Health ... ..	801	Ironmongery ... ..	243
Literature ... ..	187	Merchants, etc. ... ..	279
Science ... ..	112	Shopkeepers and Assistants ... ..	1,080
Engineering, Architecture, and ... ..		Dealers and Hawkers ... ..	380
Surveying ... ..	401	Agents and Brokers ... ..	504
Education ... ..	758	Clerks, Bookkeepers, etc. ... ..	2,563
Fine Arts ... ..	148	Commercial Travellers, Salesmen ... ..	1,194
Music ... ..	140	Others engaged in Commercial ... ..	
Amusements ... ..	224	Pursuits ... ..	704
		Speculators on Chance Events ... ..	38
		Storage ... ..	13
Total Professional ... ..	5,075	Total Commercial ... ..	14,515
<b>CLASS II.—DOMESTIC.</b>			
Hotelkeepers and Assistants ... ..	852	<b>CLASS IV.—TRANSPORT AND COMMUNICATION.</b>	
Others engaged in providing board and lodging ... ..	178	Railway Traffic ... ..	3,346
House Servants ... ..	211	Tramway Traffic ... ..	866
Coachmen and Grooms ... ..	320	Road Traffic ... ..	4,324
Hairdressers ... ..	568	Sea and River Traffic ... ..	1,546
Laundrymen ... ..	50	Postal Service ... ..	422
Others engaged domestic occupat'ns ... ..	210	Telegraph and Telephone Service ... ..	397
		Messengers, etc. ... ..	8
Total Domestic ... ..	2,389	Total Transport & Communication ... ..	10,909
<b>CLASS III.—COMMERCIAL.</b>			
Banking and Finance ... ..	370	<b>CLASS V.—INDUSTRIAL.</b>	
Insurance and Valuation ... ..	472	Books and Publications ... ..	828
Land and Household Property ... ..	126	Musical Instruments ... ..	47
Property Rights not otherwise clsd. ... ..	1	Prints and Pictures ... ..	75
Books, Publications, Advertising ... ..	141	Ornaments and Small Wares ... ..	107
Musical Instruments ... ..	10	Equipment for Sports and Games ... ..	5
Prints and Pictures ... ..	2	Designs, Medals, Type ... ..	26
Ornaments and Small Wares ... ..	5	Watches and Clocks ... ..	138
Designs, Medals, Types ... ..	1	Surgical Instruments ... ..	7
Sports and Games ... ..	1	Arms and Ammunition ... ..	12
Watches, Clocks, Jewellery ... ..	6	Engines and Machinery ... ..	1,003
Surgical Instruments ... ..	1	Carriages and Vehicles ... ..	810
Machinery ... ..	43	Harness and Saddlery ... ..	458
Carriages and Vehicles ... ..	40	Ships and Boats ... ..	120
Harness and Saddlery ... ..	6	Furniture ... ..	483
Ships, Boats, Marine Stores ... ..	8	Building Materials ... ..	602
Building Materials ... ..	6	Chemicals ... ..	45
Furniture ... ..	41	Textile Fabrics ... ..	54
Chemicals ... ..	6	Dress ... ..	1,941
Paper and Stationery ... ..	65	Fibrous Materials ... ..	37
Textile Fabrics ... ..	829	Animal Food ... ..	338
Dress ... ..	170	Vegetable Food ... ..	1,502
Fibrous Materials ... ..	10	Groceries, Drinks, Narcotics, and ... ..	
Animal Food ... ..	2,209	Stimulants ... ..	451
Vegetable Food ... ..	697	Animal Matter ... ..	435
Groceries, Drinks, Narcotics, and ... ..		Workers in wood not elsewhere clsd. ... ..	70
Stimulants ... ..	1,153	Fodder ... ..	9
Living Animals ... ..	330	Paper ... ..	25
Manures ... ..	1	Stone, Clay, Glass ... ..	630
Leather ... ..	26		

## OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN—Continued.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
Jewellery and Precious Stones ...	206	CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Metals, other than Gold & Silver ...	2,998	Agricultural ...	19,096
Gas, Electric Lighting ...	433	Pastoral ...	3,568
Building—		Dairying ...	1,256
Builders ...	348	Fisheries, Capture and Destruction of Wild Animals, or acquisition of Products yielded thereby	366
Stonemasons ...	250	Forestry ...	685
Bricklayers ...	517	Water Conservation and Supply	109
Carpenters ...	2,565	Mines and Quarries ...	7,787
Slaters ...	25		
Plasterers ...	216	Total Primary Producers ...	32,867
Painters ...	1,211		
Plumbers ...	705	CLASS VII.—INDEFINITE.	
Others ...	77	Independent Means ...	140
Roads, Railways, Earthworks ...	248	Students ...	5
Disposal of the Dead ...	38	Occupation not stated ...	30
Disposal of Refuse ...	225		
Other Industrial Workers—		Total Indefinite ...	175
Manufacturers ...	359		
Engineers, Firemen ...	2,639	Total all Occupations ...	108,940
Contractors ...	1,152		
Labourers ...	18,353		
Others ...	187		
Total Industrial ...	43,010		

11. Mothers' Age, Duration of Marriage, and Issue.—A tabulation has been made shewing, in age-groups, the duration of marriage and issue of mothers. The total number of nuptial confinements in 1910 was 108,940, viz., 107,803 single births, 1125 cases of twins, and 13 cases of triplets. From this number 349 mothers must be deducted, viz., 274 in whose case the necessary particulars either as to date of marriage or as to previous issue were not stated, while 75 registrations of births under the New South Wales Legitimation Act are also excluded. The tables refer, therefore, to a total of 108,591 mothers. They exclude children by former marriages and still-born children, but include ex-nuptial children, previous issue by the same father. The tables cannot be given *in extenso*, but the following are their most salient features. The complete tabulations are shewn in "Commonwealth Bulletin of Population and Vital Statistics, No. 25; Vital Statistics of the Commonwealth for the Year 1910."

DURATION OF MARRIAGE AND ISSUE OF MOTHERS OF ALL AGES.  
COMMONWEALTH, 1910.

Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.	Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.
Years.				Years.			
0-1 ...	17,578	17,836	1.01	18-19 ...	1,450	10,905	7.52
1-2 ...	7,663	8,545	1.12	19-20 ...	1,335	10,602	7.94
2-3 ...	7,980	14,541	1.80	20-21 ...	1,159	9,701	8.37
3-4 ...	9,620	20,268	2.11	21-22 ...	846	7,376	8.72
4-5 ...	8,002	20,239	2.53	22-23 ...	654	6,063	9.27
5-6 ...	7,191	20,998	2.92	23-24 ...	498	4,809	9.66
6-7 ...	6,417	21,254	3.31	24-25 ...	398	4,044	10.16
7-8 ...	5,299	19,230	3.63	25-26 ...	262	2,693	10.28
8-9 ...	5,177	20,681	3.99	26-27 ...	173	1,872	10.82
9-10 ...	4,535	19,856	4.38	27-28 ...	98	1,025	10.46
10-11 ...	4,533	21,454	4.93	28-29 ...	67	751	11.21
11-12 ...	3,643	18,723	5.14	29-30 ...	30	350	11.67
12-13 ...	3,213	17,658	5.49	30-31 ...	13	153	10.77
13-14 ...	2,823	16,445	5.82	31-32 ...	6	67	11.16
14-15 ...	2,444	15,034	6.15	32-33 ...	4	49	12.25
15-16 ...	2,114	13,700	6.48				
16-17 ...	1,751	11,956	6.82				
17-18 ...	1,615	11,658	7.22	Total	108,591	370,536	3.41



## AGES AND ISSUES OF MOTHERS, COMMONWEALTH, 1910.

Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.	Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.
Under 20 years	3,864	4,665	1.21	40-44 years ...	6,602	46,725	7.08
20-24 years ...	24,442	43,488	1.78	45 yrs. and over	694	6,202	8.94
25-29 " ...	31,634	84,688	2.68				
30-34 " ...	24,707	95,994	3.88				
35-39 " ...	16,648	88,774	5.33	All ages ...	108,591	370,536	3.41

## PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES, COMMONWEALTH, 1910.

Previous Issue.	Mothers' Ages.							
	Under 20 Years.	20-24 Years.	25-29 Years.	30-34 Years.	35-39 Years.	40-44 Years.	45 Years and Over.	Total.
0	3,150	12,045	8,357	3,235	1,156	252	16	28,211
1	648	7,612	8,139	4,007	1,376	291	11	22,084
2	61	3,441	6,664	4,446	1,927	434	21	16,994
3	3	1,058	4,673	4,204	2,298	536	31	12,803
4	2	222	2,368	3,551	2,378	641	45	9,207
5	...	54	979	2,432	2,191	705	45	6,406
6	...	7	334	1,551	1,885	782	50	4,609
7	...	3	95	758	1,406	702	78	3,042
8	...	...	12	324	962	714	92	2,104
9	...	...	9	125	602	607	70	1,413
10	...	...	3	52	263	402	78	798
11	...	...	...	12	120	262	40	434
12	...	...	1	4	51	146	53	255
13	...	...	...	2	26	69	36	133
14	...	...	...	3	6	36	14	59
15	...	...	...	1	...	20	7	28
16	...	...	...	...	1	2	4	7
17	...	...	...	...	...	1	3	4
Total Mothers	3,864	24,442	31,634	24,707	16,648	6,602	694	108,591

The tables shew a fairly regular increase in the number of children up to the period where the marriage has lasted twenty-one years, and it appears that the average interval between successive confinements up to that period was rather less than two and a half years. One mother of the age-group 40 to 44 years, had her seventeenth child in the twenty-fifth year of her marriage. The average number of children of all marriages was 3.41, the corresponding figure for 1909 having been 3.42.

A similar table has been prepared shewing the previous issue of mothers of twins and triplets, from which it appears that 241 mothers had twins at their first confinement; 173 at their second; 177 at their third; 154 at their fourth; 111 at their fifth; 77 at their sixth; 70 at their seventh; 40 at their eighth; 36 at their ninth; 19 at their tenth; 14 at their eleventh; 5 at their twelfth; 4 at their thirteenth; 1 at her fourteenth; 2 at their fifteenth; and one at her sixteenth.

Of the twelve cases of triplets 5 occurred at the first confinement; 1 at the third; 2 at the fourth; 1 at the fifth; 1 at the sixth; 1 at the seventh; and 1 at the tenth.

12. **Interval between Marriage and First Birth.**—The following table shews the interval between marriage and first birth. Twins and triplets are included, the eldest born only being enumerated.

**INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, COMMONWEALTH, 1910.**

Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.
Under 1 month	474	1 year	6,919	13 years	16
1 month	565	2 years	1,882	14 "	6
2 months	849	3 "	803	15 "	11
3 "	987	4 "	387	16 "	4
4 "	1,231	5 "	230	17 "	3
5 "	1,441	6 "	120	18 "	3
6 "	1,784	7 "	101	19 "	1
7 "	1,435	8 "	70	20 "	1
8 "	1,255	9 "	51	24 "	1
9 "	3,314	10 "	37	25 "	1
10 "	2,439	11 "	23		
11 "	1,747	12 "	20	Total	28,211

Of these 28,211 children 14,604 were males and 13,607 were females; the masculinity of first births was therefore 107.33 as compared with 106.39 for total births.

The previous issue of mothers of ex-nuptial children is not recorded, but for the purposes of the following table all ex-nuptial births have been assumed to be first births. The table shews the ages of mothers of ex-nuptial births, of nuptial births occurring less than nine months after marriage, and of nuptial births occurring nine months or more after marriage. A comparison of the combined total of the first two columns with the total of nuptial children born nine months or more after marriage, reveals the fact that for all ages the ratio of the two was as 9 is to 10. At all ages up to and including 21, however, there was a great preponderance of ex-nuptial births and of births following on ante-nuptial conception. It must, of course, be understood that a certain number of premature births are necessarily included among the births which occurred less than nine months after marriage, but there is no means of arriving at the proportion of those births.

**AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, etc.  
COMMONWEALTH, 1910.**

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
Years.						
12 ...	2	...	2	...	...	2
13 ...	6	1	7	...	1	7
14 ...	15	4	19	1	5	20
15 ...	64	15	79	1	16	80
16 ...	177	104	281	13	117	294
17 ...	353	358	711	63	421	774
18 ...	569	717	1,286	241	958	1,527
19 ...	646	1,077	1,723	555	1,632	2,278
20 ...	645	1,104	1,749	841	1,945	2,590
21 ...	627	1,310	1,937	1,106	2,416	3,043
22 ...	479	1,110	1,589	1,562	2,672	3,151
23 ...	448	942	1,390	1,734	2,676	3,124
24 ...	363	691	1,054	1,645	2,336	2,699
25 ...	316	616	932	1,667	2,283	2,599
26 ...	264	456	720	1,469	1,925	2,189
27 ...	195	330	525	1,292	1,622	1,817

## AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH—Cont.

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
Years.						
28 ...	210	266	476	1,128	1,394	1,604
29 ...	174	210	384	923	1,133	1,307
30 ...	184	166	350	874	1,040	1,234
31 ...	88	117	205	589	706	794
32 ...	118	88	206	512	600	718
33 ...	105	82	187	436	518	623
34 ...	83	61	144	310	371	454
35 ...	75	36	111	293	329	404
36 ...	68	44	112	229	273	341
37 ...	61	26	87	178	204	265
38 ...	72	26	98	162	188	260
39 ...	52	28	80	134	162	214
40 ...	58	14	72	89	103	161
41 ...	26	5	31	48	53	79
42 ...	31	8	39	41	49	80
43 ...	17	6	23	23	29	46
44 ...	11	1	12	17	18	29
45 ...	7	1	8	10	11	18
46 ...	7	...	7	1	1	8
47 ...	2	...	2	1	1	3
48 ...	1	...	1	...	...	1
49 ...	3	...	3	1	1	4
50 ...	...	1	1	1	2	2
Not stated	47	...	47	...	...	47
Total ...	6,669	10,021	16,690	18,190	28,211	34,880

## § 2. Marriages.

1. **Marriages, 1901 to 1910.**—The number of marriages registered in the Commonwealth in 1910 was 36,592, the highest number ever recorded. There has been a steady increase in the annual number of marriages in each State since 1903, and the crude marriage-rate increased similarly in all the States until 1907, with the exception of Western Australia, where a further diminution may reasonably be expected until the composition of the population as to sexes and ages approaches more closely to that of the other States. In 1908 all the States, with the exception of New South Wales and Tasmania, had a lower marriage rate than in 1907, but the rate recovered in 1909 and 1910, and was considerably higher in the latter year than in 1907 in all the States with the exception of Western Australia. The number of marriages in each State since 1901 is shewn below. The rate for 1910 was the highest experienced since 1864.

## TOTAL MARRIAGES, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	10,538	8,406	3,341	2,309	1,821	1,338	27,753
1902 ...	10,486	8,477	3,243	2,383	2,024	1,313	27,926
1903 ...	9,759	7,605	2,933	2,272	2,064	1,344	25,977
1904 ...	10,424	8,210	3,078	2,534	2,088	1,350	27,684
1905 ...	10,970	8,774	3,173	2,599	2,123	1,365	29,004
1906 ...	11,551	8,930	3,588	2,681	2,261	1,399	30,410
1907 ...	12,187	9,575	4,105	3,079	2,114	1,410	32,470
1908 ...	12,641	9,335	4,009	3,122	2,012	1,432	32,551
1909 ...	13,025	9,431	4,543	3,285	1,997	1,494	33,775
1910 ...	14,307	10,239	4,768	3,678	2,107	1,493	36,592

2. **Marriage Rates, 1901 to 1910.**—The number of marriages registered per thousand of mean population is shewn in the following table for the same period :—

**CRUDE MARRIAGE RATE,<sup>1</sup> COMMONWEALTH, 1901 to 1910.<sup>2</sup>**

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania	C wealth.
1901 ...	7.73	6.99	6.66	6.38	9.58	7.76	7.32
1902 ...	7.55	7.02	6.35	6.61	9.89	7.50	7.26
1903 ...	6.88	6.31	5.70	6.31	9.40	7.45	6.67
1904 ...	7.24	6.83	5.90	7.02	8.92	7.38	7.02
1905 ...	7.46	7.28	6.00	7.14	8.61	7.40	7.25
1906 ...	7.68	7.36	6.69	7.30	8.89	7.59	7.49
1907 ...	7.89	7.81	7.56	8.29	8.27	7.63	7.87
1908 ...	8.08	7.53	7.24	8.18	7.80	7.64	7.76
1909 ...	8.15	7.48	7.97	8.38	7.59	7.85	7.90
1910 ...	8.76	7.98	8.06	9.17	7.77	7.82	8.37

<sup>1</sup> Number of marriages (not persons married) per 1000 of mean annual population.

<sup>2</sup> Rates corrected in view of Census Returns, 1911.

As in some international tabulations the marriage rates are calculated per 1000 of the unmarried population of 15 years and over, the corresponding rates have been worked out for the Commonwealth for the three last Census periods. The figures comprise in each case the Census year with the year immediately preceding, and the year immediately following, and are as follows :—Years 1880-82, 48.98; years 1890-92, 45.74; years 1900-02, 42.14. These rates refer, of course, to persons married and not to marriages, as do the rates in the preceding table.

3. **Marriage Rates in Various Countries.**—A comparison of the Australian marriage rate with that of European countries shews it to be considerably below the rates prevailing in the East of Europe, almost identical with those of Central and Western Europe, and higher than those of the North of Europe :—

**CRUDE MARRIAGE RATES.—VARIOUS COUNTRIES.<sup>1</sup>**

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Canada (Ontario) ...	1908	9.45	Italy ...	1909	7.70
Rumania ...	1909	9.35	Austria ...	1908	7.60
Servia ...	1909	9.35	England and Wales ...	1909	7.30
Russia ...	1903	8.90	Denmark ...	1909	7.30
Bulgaria ...	1908	8.85	Netherlands ...	1909	7.05
Hungary ...	1909	8.50	Spain ...	1909	6.50
Commonwealth ...	1910	8.37	Finland ...	1909	6.40
New Zealand ...	1910	8.30	Scotland ...	1909	6.15
German Empire ...	1908	7.95	Norway ...	1909	6.00
France ...	1909	7.85	Sweden ...	1909	5.95
Belgium ...	1908	7.80	Ireland ...	1909	5.20
Switzerland ...	1908	7.80			

<sup>1</sup> Rates corrected in view of Census Returns, 1911.

4. **Age at Marriage.**—(a) The age at marriage of bridegrooms and brides will be found in the following table, the previous conjugal condition of the contracting parties being distinguished. It will be seen that no less than 1386 males were married during 1910 who were less than twenty-one years of age. The corresponding number of females was 7629, of whom six were widows and three were divorced. At the other extreme there were thirty men of sixty-five years and upwards, who described themselves as bachelors, and nine spinsters of corresponding ages.

**AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1910.**  
COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
14 years	...	...	...	...	7	...	...	7
15 "	1	...	...	1	64	...	...	64
16 "	4	...	...	4	275	...	...	275
17 "	26	...	...	26	828	1	1	830
18 "	143	...	...	143	1,625	1	...	1,626
19 "	401	...	...	401	2,273	2	...	2,275
20 "	811	...	...	811	2,548	2	2	2,552
21 "	2,137	1	...	2,138	3,859	7	3	3,869
22 "	2,406	...	...	2,406	3,477	16	8	3,501
23 "	2,896	7	1	2,904	3,126	8	5	3,139
24 "	2,901	6	1	2,908	2,727	26	4	2,757
25 "	2,999	24	3	3,026	2,471	36	9	2,516
26 "	2,767	26	4	2,797	2,198	44	11	2,253
27 "	2,410	25	4	2,439	1,611	36	7	1,654
28 "	2,229	42	6	2,277	1,332	52	13	1,397
29 "	1,842	33	8	1,883	1,140	48	12	1,200
30 "	1,620	55	4	1,679	939	56	14	1,009
31 "	1,165	43	7	1,215	649	51	17	717
32 "	1,144	51	7	1,202	581	63	9	653
33 "	851	62	6	919	457	65	14	536
34 "	748	48	6	802	374	73	18	465
35 "	679	60	15	754	341	70	12	423
36 "	532	73	4	609	272	80	12	364
37 "	490	50	9	549	221	83	14	318
38 "	496	81	9	586	192	86	12	290
39 "	389	87	15	491	173	80	6	259
40 "	340	82	5	427	121	83	5	209
41 "	222	62	3	287	102	39	6	147
42 "	236	72	15	323	95	48	7	150
43 "	169	79	9	257	69	68	3	140
44 "	162	63	4	229	58	51	6	115
45 "	142	76	9	227	43	72	9	124
46 "	134	75	2	211	36	55	4	95
47 "	109	63	5	177	35	49	1	85
48 "	82	77	7	166	21	41	5	67
49 "	87	65	...	152	23	38	...	61
50 "	71	57	7	135	18	50	4	72
51 "	45	53	5	103	6	32	2	40
52 "	42	56	3	101	14	25	...	39
53 "	31	53	...	84	3	32	2	37
54 "	29	44	5	78	11	21	...	32
55 "	22	50	1	73	5	19	1	25
56 "	29	39	...	68	5	25	...	30
57 "	7	23	1	31	...	14	...	14
58 "	20	34	...	54	3	14	...	17
59 "	10	32	...	42	1	8	...	9
60 "	13	35	1	49	2	17	...	19
61 "	6	26	...	32	1	9	...	10
62 "	9	31	...	40	5	8	...	13
63 "	6	19	...	25	2	9	...	11
64 "	2	22	...	24	1	7	...	8
65 "	3	31	2	36	2	15	1	18
66 "	4	18	...	22	5	7	...	12
67 "	2	18	1	21	...	7	...	7
68 "	7	20	2	29	...	7	...	7
69 "	1	11	...	12	1	3	...	4
70 "	1	19	1	21	...	5	...	5

**AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1910—Continued.  
COMMONWEALTH.**

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
71 years ...	2	9	...	11	...	...	...	...
72 " ...	...	9	...	9	...	2	...	2
73 " ...	2	11	...	13	...	3	...	3
74 " ...	3	7	...	10	...	...	...	...
75 " ...	1	6	...	7	1	3	...	4
76 " ...	...	7	...	7	...	...	...	...
77 " ...	2	2	...	4	...	...	...	...
78 " ...	1	1	...	2	...	...	...	...
79 " ...	...	2	...	2	...	...	...	...
80 " ...	1	4	1	6	...	1	...	1
82 " ...	...	2	...	2	...	2	...	2
83 " ...	...	2	...	2	...	1	...	1
85 " ...	...	1	...	1	...	...	...	...
95 " ...	...	1	...	1	...	...	...	...
99 " ...	1	...	...	1	...	...	...	...
Not stated ...	7	1	...	8	8	...	...	8
Total ...	34,150	2,244	198	36,592	34,457	1,876	259	36,592

(b) The relative ages of bridegrooms and brides are shewn for single years in "Bulletin of Population and Vital Statistics, No. 25"; a condensation into age-groups of five years is here given:—

**RELATIVE AGES OF PERSONS MARRIED, COMMONWEALTH, 1910.**

Ages.	Total Bridegrooms.	Ages of Brides.								
		Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and Upwds.	Not Stated.
Ages of Bridegrooms.										
Under 20 ...	575	1	397	165	9	3	...	...	...	...
20 to 24 ...	11,167	3	2,820	6,767	1,363	168	35	7	4	...
25 to 29 ...	12,422	1	1,315	5,990	4,142	767	163	31	13	...
30 to 34 ...	5,817	1	370	1,915	2,061	1,119	280	49	21	1
35 to 39 ...	2,989	1	106	668	911	676	452	128	45	2
40 to 44 ...	1,523	...	36	201	314	373	312	209	78	...
45 to 49 ...	933	...	14	74	141	159	223	160	162	...
50 to 54 ...	501	...	6	19	49	79	108	83	157	...
55 to 59 ...	268	...	3	12	16	16	40	52	129	...
60 to 64 ...	170	...	1	5	10	8	25	22	99	...
65 and upwards ...	219	...	1	1	4	12	16	20	165	...
Not stated ...	8	...	1	1	...	...	...	...	1	5
Total Brides ...	36,592	7	5,070	15,818	9,020	3,380	1,654	761	874	8

5. **Previous Conjugal Condition.**—In a previous table the total number of bachelors and spinsters, widowed and divorced persons, who were married during the year 1910, was shewn. In the following table the relative conjugal condition of the contracting parties is given:—

**RELATIVE CONJUGAL CONDITION OF PERSONS MARRIED, COMMONWEALTH, 1910.**

Conjugal Condition.		Total Bridegrooms.	Brides.		
			Spinsters.	Widows.	Divorced.
Bridegrooms {	Bachelors ...	34,150	32,786	1,168	196
	Widowers ...	2,244	1,531	666	47
	Divorced ...	198	140	42	16
Total Brides ...		36,592	34,457	1,876	259

6. **Birthplaces of Persons Married.**—Information as to the birthplaces of persons who were married in 1910 was not obtained in the State of Western Australia; the following figures refer, therefore, only to New South Wales, Victoria, Queensland, South Australia and Tasmania. As might be expected, there were more brides than bridegrooms who were natives of the Commonwealth. In "Bulletin No. 25 of Population and Vital Statistics" the relative birthplaces of bridegrooms and brides will be found tabulated.

### BIRTHPLACES OF PERSONS MARRIED, 1910.

#### COMMONWEALTH.<sup>1</sup>

Birthplaces.	Bridegrooms.	Brides.	Birthplaces.	Bridegrooms.	Brides.
New South Wales ...	11,274	12,337	Argentina ...	1	...
Victoria ...	9,450	9,851	British Guiana ...	1	...
Queensland ...	3,162	3,967	Peru ...	1	...
South Australia ...	3,775	3,824	S. America, so described	2	1
Western Australia ...	36	19	Uruguay ...	...	1
Tasmania ...	1,504	1,611			
New Zealand ...	405	327	Afghanistan ...	4	...
			Asia Minor ...	1	...
Austria-Hungary ...	23	7	Ceylon ...	7	...
Belgium ...	4	1	China ...	49	10
Channel Islands ...	10	4	Dutch East Indies ...	5	1
Denmark ...	68	14	India ...	62	22
England ...	2,634	1,459	Japan ...	14	4
Finland ...	6	2	Philippine Islands ...	5	1
France ...	19	20	Straits Settlements ...	2	1
Germany ...	241	99	Syria ...	22	9
Greece ...	11	2			
Ireland ...	500	347	Cape of Good Hope ...	3	2
Isle of Man ...	4	...	Egypt ...	5	1
Italy ...	53	19	Madagascar ...	1	1
Malta ...	2	...	Mauritius ...	7	2
Netherlands ...	11	1	S. Africa (so described)	33	14
Norway ...	31	4			
Portugal ...	2	...	Fiji ...	11	4
Rumania ...	1	1	Friendly Islands ...	1	...
Russia ...	30	8	New Caledonia ...	6	2
Scotland ...	670	333	New Hebrides ...	2	...
Spain ...	7	1	Norfolk Islands ...	1	...
Sweden ...	37	8	Samoa ...	2	...
Switzerland ...	9	4	Society Islands ...	1	...
Turkey ...	6	1	Solomon Islands ...	2	...
Wales ...	73	56	S. Sea Is. (so describ'd)	9	2
Canada ...	20	11	Born at sea ...	33	15
Mexico ...	...	2			
Newfoundland ...	...	...	Birthplace not stated	11	17
United States... ..	99	35			
West Indies ...	4	...	Total ...	34,485	34,485

1. Exclusive of Western Australia.

7. **Occupations and Ages of Bridegrooms.**—A tabulation has been made of the occupations and ages of all males married in the Commonwealth in the years 1907, 1908, 1909, and 1910. In "Bulletin No. 25" the 1910 tabulation is shewn for orders of occupations: here it is repeated for classes only, with a subdivision of the Industrial class and of the class of Primary Producers. The average ages of the persons falling under those twelve subdivisions were determined, and it appears that, apart from the Indefinite class, which consists chiefly of persons who have retired from business and

who are living on their own means, and where a high average age may naturally be expected, the average age ranges from 28.29 in the Manufacturing class to 32.33 years in the Pastoral class. The averages, calculated on the basis of the 1907, 1908 and 1909 figures, have been added for the purposes of comparison. The figures for four years are, however, rather small to allow of definite conclusions being drawn. The results obtained are shewn in the following table:—

### OCCUPATIONS AND AGES OF BRIDEGROOMS, COMMONWEALTH, 1910.

Ages at Marriage.	Professional.	Domestic.	Mercantile.	Transport and Communication.	Industrial.			Primary Producers.				Indefinite.
					Manu- facturing.	Building and Construction.	Indefinite Industrial Workers.	Agricultural.	Pastoral.	Mines and Quarries.	Other Primary Producers.	
15 years ...	...	...	...	...	1	...	2	1	...	...	...	...
16 " ...	...	...	...	...	5	...	9	...	...	1	...	...
17 " ...	...	1	2	2	...	1	4	...	...	2	...	...
18 " ...	1	3	26	20	37	5	36	7	3	4	1	...
19 " ...	8	5	62	40	80	25	124	25	7	21	4	...
20 " ...	15	13	99	83	159	73	236	68	7	51	7	...
21 " ...	52	52	291	250	369	142	561	210	43	158	7	3
22 " ...	77	70	331	280	402	168	633	240	47	138	19	1
23 " ...	109	71	408	314	440	205	706	375	56	181	30	9
24 " ...	165	59	439	290	447	220	656	372	84	159	14	3
25 " ...	179	67	527	327	436	183	618	424	84	160	16	5
26 " ...	165	64	493	251	385	187	585	424	85	137	16	5
27 " ...	151	60	439	225	332	121	473	402	84	133	14	5
28 " ...	138	57	439	192	276	120	469	363	83	123	14	3
29 " ...	131	34	383	179	209	86	368	299	80	96	16	2
30 " ...	124	42	290	143	207	79	321	304	76	83	9	1
31 " ...	83	22	207	98	119	50	240	253	58	73	11	1
32 " ...	86	27	208	106	132	49	227	236	57	61	13	...
33 " ...	65	23	165	64	103	53	167	172	48	49	10	...
34 " ...	59	10	153	67	80	29	137	166	48	47	5	1
35 to 39 years	242	80	505	205	292	124	601	564	165	170	28	13
40 " 44 "	119	41	251	108	137	87	304	294	92	80	6	4
45 " 49 "	60	26	146	70	89	47	196	167	52	62	9	9
50 years and upwards	74	34	159	83	132	77	205	209	65	48	10	62
Not stated	2	...	3	...	1	...	...	1	...	...	...	1
Total	2,105	861	6,026	3,397	4,870	2,131	7,874	5,580	1,324	2,037	259	128
Average age—years (1910)	31.19	30.07	29.73	28.51	28.29	28.88	28.90	30.94	32.33	29.25	30.23	45.47
" " " (1909)	31.25	30.09	29.80	28.61	28.40	29.12	28.86	31.07	33.10	28.78	28.89	39.88
" " " (1908)	31.01	30.62	29.77	28.83	28.46	29.02	28.89	30.96	32.63	29.00	29.33	41.12
" " " (1907)	31.26	30.12	29.74	28.90	28.01	29.71	28.76	30.93	32.55	29.03	29.19	38.26

The average age at marriage of brides has slowly risen from 25.56 years in 1907 to 25.77 years in 1910. The figures for the four years are:—1907, 25.56 years; 1908, 25.67 years; 1909, 25.74 years; and 1910, 25.77 years, while for the four years combined the average age was 25.69 years.

**8. Fertility of Marriages.**—The quotient obtained by division of the nuptial births registered, say during the five years 1906 to 1910, by the number of marriages registered during the five years 1901 to 1905, *i.e.*, the period antecedent by five years to the period of the births, has been called the "fertility of marriages." This works out at 4.05, or in other words, the number of children to be expected from every marriage in the Commonwealth is four. This method, while not professing any claim to accuracy, furnishes results which agree fairly well with those found by more elaborate and careful investigation.

**9. Registration of Marriages.**—In all the States of the Commonwealth marriages may be celebrated either by ministers of religion, whose names are registered for that purpose with the Registrar-General, or by certain civil officers, in most cases district registrars. The percentage of marriages celebrated by ministers of religion has increased from 96.25 per cent. in 1901 to 97.18 per cent. in 1910. The figures for the individual States in 1910 were: New South Wales, 98.03 per cent.; Victoria, 98.41 per cent.; Queensland, 95.91 per cent.; South Australia, 96.03 per cent.; Western Australia, 89.75



per cent.; and Tasmania, 98.85 per cent. The registered ministers in 1910 belonged to forty different denominations, some of which, however, can hardly be regarded as having any valid existence. The extraordinary number of marriages credited to some denominations, the number of whose adherents, according to the Census returns, was very small indeed, is not inconsistent with the supposition that some of these denominations have been created for the purpose of obtaining the registration necessary to conduct marriages, or to be connected with a so-called "Matrimonial Agency." The figures for 1910 are shewn in the following table:—

#### MARRIAGES IN EACH DENOMINATION, COMMONWEALTH, 1910.

Denomination.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Church of England ...	5,883	2,517	1,214	807	807	525	11,753
Roman Catholic Church ...	2,619	1,720	937	394	356	227	6,253
Presbyterian Church of Australia	1,993	1,873	685	171	171	143	5,036
Free Presbyterian Church ...	...	...	...	3	...	...	3
Independent Presbyterian Church	...	219	...	...	...	...	219
Welsh Presbyterian Church ...	...	7	...	...	...	...	7
Methodist Church ...	1,772	1,569	872	1,238	377	263	6,091
Congregational Church ...	1,012	1,149	125	191	70	167	2,714
Baptist Church ...	226	432	246	239	47	128	1,318
German Baptist Church ...	...	...	10	...	...	...	10
Particular Baptist Church ...	2	...	...	...	...	...	2
Church of Christ ...	316	207	19	165	30	5	742
Christian Brethren ...	7	...	...	28	...	...	35
Lutheran Church ...	25	81	164	218	6	...	494
Evangelical Lutheran Church ...	4	...	3	...	...	...	7
German Lutheran Church ...	5	...	20	...	...	...	25
Greek Orthodox Church ...	1	4	...	...	...	...	5
Australian Church ...	...	29	...	...	...	...	29
Unitarian Church ...	10	4	...	7	...	...	21
Moravian Church ...	...	1	1	...	...	...	2
Apostolic Church ...	...	...	5	...	...	...	5
Catholic Apostolic Church ...	2	3	5	...	1	...	11
Christadelphians ...	7	...	...	...	...	...	7
Welsh Protestant Church ...	...	1	2	...	...	...	3
Salvation Army ...	71	43	33	31	18	7	203
Seventh-Day Adventists ...	9	7	2	10	5	3	36
Latter-Day Saints ...	14	5	...	5	...	...	24
New Church ...	...	1	1	...	...	...	2
Free Church ...	2	...	...	...	...	...	2
Free Christian Church ...	...	89	...	...	...	...	89
United Christian Church ...	...	1	...	...	...	...	1
Christian Assembly ...	...	...	11	...	...	...	11
Society of Friends ...	...	...	...	...	...	1	1
City Mission ...	...	...	...	23	...	...	23
Ballarat Town Mission ...	...	78	...	...	...	...	78
Joyful News Mission ...	...	...	191	...	...	...	191
Helping Hand Mission ...	...	...	...	...	...	7	7
Aboriginal Mission ...	5	...	...	...	...	...	5
West End Mission ...	...	...	9	...	...	...	9
Jewish ...	37	37	3	2	3	...	82
Registrar's Office ...	285	162	205	146	216	17	1,031
Not stated ...	...	...	5	...	...	...	5
Total ...	14,307	10,239	4,768	3,678	2,107	1,493	36,592

10. **Mark Signatures.**—The marriage registers afford some clue, even if an imperfect one, to the illiteracy of the adult population, since a small and constantly diminishing percentage of bridegrooms and brides sign the registers with marks.

(i.) *Males and Females, 1901 to 1910.* For a number of years, with the exception of 1905, 1908 and 1910, mark signatures by males have been slightly more numerous than those by females, the percentages for the Commonwealth during the past ten years having been as follows :—

**PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1901 to 1910.**

Year. ...	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Male ...	1.35	1.21	1.17	0.95	0.91	0.92	0.81	0.71	0.65	0.56
Female	1.29	1.11	1.02	0.91	0.93	0.86	0.70	0.73	0.62	0.59

(ii.) *Mark Signatures in Commonwealth States, 1901 to 1910.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian the lowest, in each of the ten years under review, there has been a marked decrease in every State :—

**PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1901 to 1910.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	1.34	0.53	2.56	0.95	0.99	4.11	1.32
1902 ...	1.22	0.61	1.93	1.15	0.69	3.12	1.16
1903 ...	1.10	0.60	1.86	1.32	0.75	2.38	1.10
1904 ...	0.90	0.54	1.72	0.65	0.53	2.85	0.93
1905 ...	1.12	0.44	1.39	0.83	0.57	2.12	0.92
1906 ...	0.94	0.43	1.67	0.67	0.66	2.18	0.89
1907 ...	0.87	0.36	1.14	0.55	0.64	2.02	0.76
1908 ...	0.79	0.33	1.20	0.56	0.82	1.57	0.72
1909 ...	0.60	0.22	1.16	0.64	0.68	2.07	0.64
1910 ...	0.61	0.29	0.92	0.57	0.52	1.17	0.55

A complete disappearance of mark signatures is hardly to be expected, for the available information tends to shew that two-thirds of those who sign with marks are natives of their respective States, who apparently have not made use of the advantages offered to them by the State schools.

### § 3. Deaths.

1. *Male and Female Deaths, 1901 to 1910.*—The total number of deaths registered in the Commonwealth from 1901 to 1910 inclusive, gives an annual average of 26,209 males and 19,252 females, the details being as follows :—

**MALE DEATHS, COMMONWEALTH, 1901 to 1910.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901 ...	9,327	9,035	3,838	2,289	1,653	1,001	27,143
1902 ...	9,535	9,152	3,924	2,389	1,832	1,044	27,876
1903 ...	9,428	8,626	3,951	2,242	1,829	1,136	27,212
1904 ...	8,733	7,992	3,259	2,071	1,823	1,061	24,939
1905 ...	8,709	8,273	3,499	2,041	1,728	1,061	25,311
1906 ...	8,715	8,342	3,212	2,109	1,878	1,118	25,374
1907 ...	9,444	7,977	3,482	2,087	1,866	1,083	25,939
1908 ...	9,298	8,816	3,500	2,106	1,800	1,112	26,632
1909 ...	9,184	8,070	3,419	2,140	1,671	1,030	25,514
1910 ...	9,339	8,128	3,594	2,235	1,760	1,098	26,154
Rate,* 1910	10.94	12.81	11.15	10.95	11.39	11.26	11.54

\* Number of deaths per 1000 of mean population.

## FEMALE DEATHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	C'wealth.
1901 ...	6,694	6,869	2,169	1,776	866	813	19,187
1902 ...	7,111	7,025	2,280	1,925	991	870	20,202
1903 ...	7,069	6,969	2,395	1,709	959	980	20,081
1904 ...	6,627	6,401	1,991	1,707	994	913	18,633
1905 ...	6,269	6,403	2,004	1,763	981	783	18,203
1906 ...	6,260	6,895	1,883	1,822	1,206	893	18,959
1907 ...	6,967	6,562	2,116	1,741	1,065	915	19,366
1908 ...	6,757	6,950	2,180	1,811	1,079	1,017	19,794
1909 ...	6,626	6,366	2,111	1,710	1,033	812	18,658
1910 ...	6,819	6,604	2,150	1,861	980	1,022	19,436
Rate,* 1910 ...	8.75	10.19	7.98	9.45	8.41	10.94	9.24

\* Number of deaths per 1000 of mean population.

2. **Male and Female Death Rates, 1910.**—The crude male and female death rates for 1910 only are given, viz., in the last line of the preceding tables. Victoria has the highest rate for males and Tasmania for the females, while New South Wales has the lowest male and Queensland the lowest female death rate.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but as has been pointed out in the case of the births, the available data, at a period so remote from the Census, are insufficient for a satisfactory distribution of the population according to ages. For the purposes of calculating the "Index of Mortality" (see page 198) a distribution into five age-groups has, however, been made.

3. **Death Rates of Various Countries.**—A comparison with foreign States is, for the same reason, apt to show the Commonwealth in too favourable a light, but even if an allowance for the different age constitution were made, it would still be found occupying a very enviable position. The following table gives particulars of the death rates of various countries for the latest available years :—

## DEATH RATES\* OF VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
New Zealand ...	1910	9.7	German Empire ...	1908	18.1
<b>Commonwealth</b> ...	<b>1910</b>	<b>10.4</b>	France ...	1909	19.3
Denmark ...	1909	13.1	Japan ...	1908	21.0
Norway ...	1909	13.5	Italy ...	1909	21.4
Sweden ...	1909	13.7	Jamaica ...	1909	21.7
Netherlands ...	1909	13.7	Austria ...	1908	22.3
Canada (Ontario) ...	1908	13.9	Spain ...	1909	23.4
England and Wales ...	1909	14.5	Bulgaria ...	1908	24.3
United Kingdom ...	1908	15.1	Hungary ...	1909	25.1
Scotland ...	1909	15.3	Rumania ...	1909	27.8
Switzerland ...	1908	16.2	Servia ...	1909	29.3
Belgium ...	1908	16.5	Russia, European ...	1903	30.0
Finland ...	1909	16.7	Ceylon ...	1909	30.3
Ireland ...	1909	17.2	Chile ...	1909	31.5

\* Number of deaths per 1000 of mean population.

4. **Total Deaths, 1901 to 1910.**—The total number of deaths in each of the Commonwealth States during the ten years 1901 to 1910, is shewn below :—

## TOTAL DEATHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	16,021	15,904	6,007	4,065	2,519	1,814	46,330
1902 ...	16,646	16,177	6,204	4,314	2,823	1,914	48,078
1903 ...	16,497	15,595	6,346	3,951	2,788	2,116	47,293
1904 ...	15,360	14,393	5,250	3,778	2,817	1,974	43,572
1905 ...	14,978	14,676	5,503	3,804	2,709	1,844	43,514
1906 ...	14,975	15,237	5,095	3,931	3,084	2,011	44,333
1907 ...	16,411	14,539	5,598	3,828	2,931	1,998	45,305
1908 ...	16,055	15,766	5,680	3,917	2,879	2,129	46,426
1909 ...	15,810	14,436	5,530	3,850	2,704	1,842	44,172
1910 ...	16,158	14,732	5,744	4,096	2,740	2,120	45,590

5. **Crude Death Rates, 1901 to 1910.**—The death rate for 1910 showed an increase on that for 1909 in four States, New South Wales and Western Australia being the exceptions. The rates, with the exception of that for Tasmania, are, however, considerably lower than those experienced during the early years of the decade. The Commonwealth rate for 1910 was considerably lower than in any of the other years of the period under review excepting the year 1909.

CRUDE DEATH RATES<sup>1</sup> COMMONWEALTH, 1901 to 1910.<sup>2</sup>

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	11.75	13.22	11.98	11.23	13.39	10.51	12.22
1902 ...	11.98	13.40	12.15	11.97	13.79	10.93	12.49
1903 ...	11.67	12.94	12.33	10.98	12.69	11.73	12.15
1904 ...	10.67	11.97	10.06	10.46	12.04	10.79	11.05
1905 ...	10.18	12.17	10.40	10.45	10.98	10.00	10.88
1906 ...	9.95	12.55	9.50	10.71	12.12	10.91	10.92
1907 ...	10.63	11.86	10.31	10.30	11.47	10.81	10.99
1908 ...	10.20	12.71	10.26	10.26	11.17	11.36	11.07
1909 ...	9.89	11.45	9.70	9.82	10.27	9.68	10.33
1910 ...	9.89	11.49	9.71	10.21	10.11	11.10	10.43

1. Number of deaths per thousand of mean population for year.

2. Rates corrected in view of Census Returns.

6. **Male and Female Death Rates, 1901 to 1910.**—The rise in the Commonwealth rate from 1905 to 1907 was due to an increase in the female death rate, while the increase in 1908 was practically limited to the male death rate, as the subjoined table shews. The decrease from 1908 to 1909 was fairly equal for the male and female rates:—

MALE AND FEMALE DEATH RATES,<sup>1</sup> COMMONWEALTH, 1901 to 1910.<sup>2</sup>

Year.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Male rate ...	13.66	13.83	13.37	12.12	12.14	12.01	12.11	12.24	11.51	11.54
Female rate ...	10.64	11.02	10.80	9.88	9.50	9.73	9.77	9.81	9.06	9.24
Crude total rate ...	12.22	12.49	12.15	11.05	10.88	10.92	10.99	11.07	10.33	10.43

1. Number of deaths per thousand of mean population.

2. Rates corrected in view of Census Returns.

7. **Infantile Death Rate.**—(i.) *Deaths and Death Rates of Male and Female Infants, 1901 to 1910.* A marked improvement has taken place in the infantile death rate since

1901, in which year it stood at 103.61 per thousand births registered, while in 1909 it had fallen to 71.56 per thousand, a rate lower than that experienced in any previous year. In 1910, however, the rate rose to 74.81 per thousand, every State except Queensland shewing an increased rate. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1901, males and females are distinguished. The universal experience that during the first few years of life the excess of male births disappears as a consequence of the higher death rate of male infants is shewn by the fact that out of 550,588 male infants born from 1901 to 1910, 51,896 died during their first year of life, while of 523,284 female infants the number who died was only 41,343:—

**NUMBER OF INFANTILE DEATHS AND RATE OF INFANTILE MORTALITY,  
COMMONWEALTH, 1901 to 1910.**

Year.	Registered Deaths under one year.			Rate of Infantile Mortality. <sup>1</sup>		
	Males.	Females.	Total.	Males.	Females.	Total.
1901	5,888	4,778	10,666	112.13	94.73	103.61
1902	6,008	5,004	11,012	114.19	99.76	107.15
1903	6,003	4,960	10,963	119.09	103.25	111.36
1904	4,713	3,800	8,513	88.33	74.87	81.77
1905	4,884	3,696	8,580	90.62	72.41	81.76
1906	5,002	3,981	8,983	90.10	76.01	83.26
1907	4,993	3,952	8,945	88.39	73.38	81.06
1908	4,885	3,791	8,676	85.53	69.65	77.78
1909	4,604	3,559	8,163	78.73	64.02	71.56
1910	4,916	3,822	8,738	81.65	67.53	74.81

1. Number of deaths under 1 year per 1000 births registered.

(ii.) *Infantile Mortality, 1901 to 1910.* Divided among the six States, the rate of infantile mortality during the last ten years was as follows:—

**RATE<sup>1</sup> OF INFANTILE MORTALITY, COMMONWEALTH, 1901 to 1910.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901 ...	103.74	102.94	101.94	99.99	128.89	89.05	103.61
1902 ...	109.74	108.60	100.17	94.00	142.01	79.06	107.15
1903 ...	110.35	106.40	119.88	97.09	141.22	110.83	111.36
1904 ...	82.42	77.92	76.13	70.51	113.02	90.70	81.77
1905 ...	80.55	83.30	75.52	72.96	104.19	80.65	81.76
1906 ...	74.53	92.92	74.68	75.90	110.00	90.19	83.26
1907 ...	88.46	72.60	77.65	66.57	97.51	82.97	81.06
1908 ...	75.20	86.05	70.67	69.46	84.72	75.16	77.78
1909 ...	73.87	71.36	71.50	61.04	78.01	64.91	71.56
1910 ...	74.73	76.88	62.90	70.70	78.18	101.68	74.81

1. Number of deaths under 1 year per 1000 births registered.

The movement has been a fairly regular one, shewing an increase in the rate during 1902 and 1903, and a fall since the latter year, so that the 1909 rate was lower than that for 1901 in every State. The regrettable increase in the Victorian rate for 1908 over that of 1907 was wholly due to the large mortality caused by the phenomenal heat of January, 1908. With the exception of Queensland, where the 1908 rate was exceptionally low, the 1909 rate was the lowest ever experienced in any of the States. A further rise occurred in every State in 1910, with the exception of Queensland, in which State the rate has fallen to the remarkably low proportion of 62.90 per thousand births. Infantile diarrhoea was largely responsible for the great increase in the Tasmanian rate in 1910.

(iii.) *Infantile Mortality in Various Countries and Cities.* Compared with European countries the cities and States of the Commonwealth occupy a very enviable position, and it may be pointed out that experience has shewn that a high birth rate is often, though not invariably, accompanied by a high infantile death rate. The figures in the subjoined tables relate to the latest years for which returns are available:—

### RATE<sup>1</sup> OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Rate of Infantile Mortality. <sup>1</sup>	Crude Birth Rate. <sup>2</sup>	Country.	Year.	Rate of Infantile Mortality. <sup>1</sup>	Crude Birth Rate. <sup>2</sup>
New Zealand ...	1910	68	26.2	Belgium ...	1908	147	24.9
Commonwealth ...	1910	75	26.7	Italy ...	1908	153	33.4
Norway ...	1908	76	26.2	Japan ...	1908	157	33.9
Sweden ...	1908	85	25.7	Servia ...	1908	158	36.8
Ireland ...	1909	92	23.5	Bulgaria ...	1908	170	40.4
Netherlands ...	1909	99	29.1	Spain ...	1906	173	33.4
Switzerland ...	1908	108	27.1	Jamaica ...	1909	174	37.8
England and Wales	1909	109	25.6	German Empire ...	1907	176	32.3
Finland ...	1909	111	31.3	Rumania ...	1899	198	42.0
United Kingdom ...	1908	118	26.3	Ceylon ...	1909	202	36.7
Scotland ...	1908	121	27.2	Austria ...	1907	204	33.8
Denmark ...	1908	123	28.3	Hungary ...	1909	212	37.0
Canada (Ontario) ...	1908	124	24.9	Russia, European	1903	256	48.1
France ...	1907	135	19.7	Chile ...	1908	320	39.3

1. Number of deaths under 1 year per 1000 births registered. 2. Number of births per 1000 of mean population.

### RATE<sup>1</sup> OF INFANTILE MORTALITY IN VARIOUS CITIES.

City.	Year.	Rate of Infantile Mortality. <sup>1</sup>	Crude Birth Rate. <sup>2</sup>	City.	Year.	Rate of Infantile Mortality. <sup>1</sup>	Crude Birth Rate. <sup>2</sup>
Adelaide ...	1910	78	25.8	Glasgow ...	1910	121	25.1
Amsterdam ...	"	78	23.6	Dresden ...	"	129	21.6
Perth (W.A.) ...	"	79	28.9	Dublin (Registra-	"		
Christiania ...	"	83	23.5	tion area) ...	"	142	28.3
Sydney ...	"	84	26.5	Belfast ...	"	143	27.8
Brisbane ...	"	84	28.3	Budapest ...	"	148	26.5
Stockholm ...	"	92	23.2	Hamburg ...	"	149	23.2
Melbourne ...	"	93	23.3	Berlin ...	"	157	21.5
The Hague ...	"	93	25.4	Prague ...	"	164	19.2
Rotterdam ...	"	94	29.6	Munich ...	"	166	23.4
London ...	"	103	23.6	Rio de Janeiro ...	"	166	27.8
Edinburgh ...	"	111	19.6	Vienna ...	"	176	19.9
Milan ...	"	113	23.3	Breslau ...	"	188	27.5
Paris ...	"	118	18.0	Trieste ...	"	190	32.9
Copenhagen ...	"	118	26.1	St. Petersburg ...	"	262	27.8
Hobart ...	"	119	28.9	Moscow ...	"	297	35.9

1. Number of deaths under 1 year per 1000 births registered. 2. Number of births per 1000 of mean population.

(iv.) *The Effect of Infantile Mortality on Birth Rate.* It has been contended by certain investigators that the birth-rate question is intimately related to that of infantile mortality, and that in many cases a declining birth rate may be to a large extent accounted for by a decline in the infantile death rate, since, in the case in which an infant has survived, the period elapsing before the birth of the next child is likely to be longer than in the case in which the infant has died. It may indeed be readily admitted that in any community the birth rate may be affected in a definite way by variations of infantile mortality, but careful investigation of the question serves to shew that, whether considered from the theoretical aspect with a view to determining the *maximum* and the *probable* effects which a given change in the rate of infantile mortality would produce in the birth rate, or from the practical point of view by observing the fluctuations in the birth rates of various countries which have been collateral with changes in their rates of infantile mortality, there is little ground for the contention that the rate of infantile mortality is an important factor in determining the variations in the birth rate. One calculation which has been made on the basis of normal Australian conditions indicates that the *maximum* effect of increasing the rate of infantile mortality 100 per cent. would, in the absence of other disturbing causes, be to increase the birth rate by only  $3\frac{1}{4}$  per cent., whilst the *probable* effect would be considerably less than this. In other words, the *maximum* effect of an increase in the rate of infantile mortality from 100 to 200 per 1000 births would be to increase the birth rate from say 30 to 31 per 1000 of population. It may be noted too, that although in some countries an increase in birth-rate accompanies an increase in the rate of infantile mortality, in others the birth rate would appear to be quite unaffected by such an increase, while in the case of England and Wales, Scotland, and Ireland, the tendency apparently exhibited is for an increase in the rate of infantile mortality to be associated with a decrease in the birth rate. The conclusion which these results appear to warrant is that although infantile mortality undoubtedly tends on the whole to increase the birth rate, the practical effect produced is so slight that the existence of such a relation may in any instance be quite masked by more important causes of variation.

8. **Deaths in Age-Groups, 1901 to 1910.**—A distribution into age-groups has been made of the 454,613 deaths which occurred in the Commonwealth from 1901 to 1910, and the results are tabulated for each State. It is, however, sufficient here to shew the results for the Commonwealth as a whole, which are as follows:—

**DEATHS IN AGE-GROUPS, COMMONWEALTH, 1901 to 1910.**

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year ...	51,897	41,842	93,239	19.80	21.47	20.51
1 year and under 5 ...	15,302	14,013	29,315	5.84	7.28	6.45
5 years and under 20 ...	15,316	13,628	28,944	5.84	7.08	6.37
20 years and under 40 ...	36,299	31,834	68,133	13.85	16.54	14.99
40 years and under 60 ...	51,633	30,161	81,794	19.70	15.67	17.99
60 years and under 65 ...	14,967	9,183	24,150	5.71	4.77	5.31
65 years and over ...	76,204	52,274	128,478	29.08	27.15	28.26
Age not stated ...	476	84	560	0.18	0.04	0.12
<b>Total ...</b>	<b>262,094</b>	<b>192,519</b>	<b>454,613</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

9. Deaths at Single Ages and in Age-Groups, 1910.—The 45,590 deaths which were registered in the Commonwealth in the year 1910 will be found tabulated under single years, and in groups of five years for each State, in "Bulletin No. 25, Population and Vital Statistics, 1910." It has been thought advisable to tabulate the deaths during the first year of life in greater detail. The first month has, therefore, been shewn in weeks, and the remainder of the year in months. This tabulation shews a great number of children dying during the first week, the number gradually diminishing towards the end of the year. The particulars relating to the Commonwealth are given in the following table:—

## DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1910.

## COMMONWEALTH.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Under 1 week ...	1,417	1,004	2,421	15 years ...	97	67	164
1 week and under 2 ...	290	220	510	16 " ...	93	94	187
2 weeks " " 3 ...	182	151	333	17 " ...	116	91	207
3 " " " 4 ...	165	116	281	18 " ...	129	112	241
				19 " ...	143	135	278
Total under one month ...	2,054	1,491	3,545	Total 15 years and under 20	578	499	1,077
1 month and under 2 ...	490	350	830				
2 months " " 3 ...	380	287	667	20 years ...	144	106	250
3 " " " 4 ...	366	287	653	21 " ...	145	135	283
4 " " " 5 ...	278	257	535	22 " ...	147	160	307
5 " " " 6 ...	253	207	460	23 " ...	159	153	312
6 " " " 7 ...	247	187	434	24 " ...	157	156	313
7 " " " 8 ...	206	161	367				
8 " " " 9 ...	168	186	354	Total 20 years and under 25	755	710	1,465
9 " " " 10 ...	190	158	348				
10 " " " 11 ...	151	128	279	25 years ...	154	163	317
11 " " " 12 ...	143	123	266	26 " ...	166	180	346
				27 " ...	176	153	329
Total under 1 year ...	4,916	3,822	8,738	28 " ...	139	168	307
1 year ...	828	714	1,542	29 " ...	149	145	294
2 years ...	310	277	587				
3 " ...	182	183	365	Total 25 years and under 30	784	809	1,593
4 " ...	168	123	291				
Total under 5 years ...	6,404	5,119	11,523	30 years ...	171	160	331
				31 " ...	126	129	255
5 years ...	109	107	216	32 " ...	175	136	311
6 " ...	114	104	218	33 " ...	161	151	312
7 " ...	96	66	162	34 " ...	150	149	299
8 " ...	71	61	132				
9 " ...	76	63	139	Total 30 years and under 35	783	725	1,508
Total 5 years and under 10	466	401	867				
				35 years ...	194	164	358
10 years ...	71	51	122	36 " ...	189	155	344
11 " ...	69	67	136	37 " ...	167	137	304
12 " ...	80	60	140	38 " ...	220	177	397
13 " ...	73	51	124	39 " ...	180	174	354
14 " ...	68	80	148				
Total 10 years and under 15	361	309	670	Total 35 years and under 40	950	807	1,757



## DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1910—Continued.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total
40 years ...	281	160	441	75 years ...	474	346	820
41 " ...	177	106	283	76 " ...	411	305	716
42 " ...	282	194	476	77 " ...	374	266	640
43 " ...	212	149	361	78 " ...	419	312	731
44 " ...	216	155	371	79 " ...	338	230	568
Total 40 years and under 45	1,168	764	1,932	Total 75 years and under 80	2,016	1,459	3,475
45 years ...	360	178	538	80 years ...	407	280	687
46 " ...	266	146	412	81 " ...	242	168	410
47 " ...	283	142	425	82 " ...	252	216	468
48 " ...	314	176	490	83 " ...	233	170	403
49 " ...	305	175	480	84 " ...	251	199	450
Total 45 years and under 50	1,528	817	2,345	Total 80 years and under 85	1,385	1,033	2,418
50 years ...	357	206	563	85 years ...	183	127	310
51 " ...	219	133	352	86 " ...	158	129	287
52 " ...	310	185	495	87 " ...	116	105	221
53 " ...	283	160	443	88 " ...	93	99	192
54 " ...	301	171	472	89 " ...	79	63	142
Total 50 years and under 55	1,470	855	2,325	Total 85 years and under 90	629	523	1,152
55 years ...	310	161	471	90 years ...	65	76	141
56 " ...	316	183	499	91 " ...	54	49	103
57 " ...	257	124	381	92 " ...	36	39	75
58 " ...	301	173	474	93 " ...	19	27	46
59 " ...	257	156	413	94 " ...	13	19	32
Total 55 years and under 60	1,441	797	2,238	Total 90 years and under 95	187	210	397
60 years ...	342	178	520	95 years ...	19	14	33
61 " ...	227	138	365	96 " ...	12	11	23
62 " ...	291	154	445	97 " ...	8	11	19
63 " ...	264	206	470	98 " ...	9	10	19
64 " ...	304	175	479	99 " ...	7	3	10
Total 60 years and under 65	1,428	851	2,279	Total 95 yrs. and under 100	55	49	104
65 years ...	372	242	614	100 years ...	1	4	5
66 " ...	320	248	568	101 " ...	6	4	10
67 " ...	313	257	570	102 " ...	2	3	5
68 " ...	384	246	630	103 " ...	1	1	2
69 " ...	364	272	636	104 " ...	2	...	2
Total 65 years and under 70	1,753	1,265	3,018	105 " ...	1	1	2
70 years ...	452	311	763	107 " ...	2	...	2
71 " ...	279	219	498	108 " ...	1	...	1
72 " ...	358	300	658	109 " ...	1	...	1
73 " ...	397	283	680	113 " ...	...	1	1
74 " ...	441	293	734	Total 100 years and over...	16	14	30
Total 70 years and under 75	1,927	1,406	3,333	Age not stated ...	70	14	84
				Total all ages ...	26,154	19,436	45,590

10. Deaths of Centenarians, 1910.—Particulars as to the thirty persons who died in 1910, aged 100 years and upwards, are given in the following table. It must, of course, be understood that while the Registrars-General of the various States take the greatest care to have statements as to abnormally high ages verified as far as possible, no absolute reliance can be placed on the accuracy of the ages shewn, owing to the well-known tendency of very old people to overstate their ages. The fact must not be lost sight of in connection with this question, that while parish registers in the United Kingdom often date very far back, compulsory registration of births dates practically only from 1874, the Act passed in 1836 having left many loop-holes open for those unwilling to register the births of their children.

## DEATHS OF CENTENARIANS, 1910.

## COMMONWEALTH.

Age	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth-place.	Length of Residence in Commonwealth.
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## MALES.

Yrs.						
109	Cootamundra ...	N.S.W. ...	Senile decay ...	Gold miner	Ireland ...	80 years
108	Hospital, Geelong	Victoria	" ...	Labourer	Scotland ...	51 "
107	Romsey ...	" ...	" ...	Independ't	Ireland ...	57 "
107	Benevolent Asyl., Ballarat	" ...	" ...	Tailor	" ...	92 "
105	Randwick ...	N.S.W. ...	" ...	Labourer...	England ...	88 "
104	Beenleigh ...	Queensland	Arterio sclerosis	" ...	Ireland ...	22 "
104	Richmond ...	Tasmania...	Senile decay ...	" ...	England ...	Not stated
102	Norwood ...	S. Australia	" ...	" ...	" ...	64 years
102	Zeehan ...	Tasmania...	Bronchitis ...	" ...	Ireland ...	Not stated
101	Rookwood Asyl'm	N.S.W. ...	Senile decay ...	Storek'per	England ...	77 years
101	Oberon ...	" ...	Acute bronchitis	Farmer ...	Ireland ...	70 "
101	Bombala ...	" ...	Senile decay ...	" ...	Scotland ...	52 "
101	Mt. Korong ...	Victoria ...	" ...	Gold miner	England ...	75 "
101	Benevolent Asyl., Ballarat	" ...	" ...	Labourer...	Ireland ...	Not stated
101	Ballarat ...	" ...	" ...	" ...	" ...	" ...
100	Brunswick ...	" ...	Pneumonia ...	Farmer ...	Scotland ...	58 years

## FEMALES.

113	Cowes ...	Victoria ...	Senile decay ...	...	Ireland ...	60 years
105	Colac ...	" ...	Hemiplegia ...	...	" ...	56 "
103	Manly ...	N.S.W. ...	Bronchitis ...	...	England ...	62 "
102	Blayney ...	" ...	Senile decay ...	...	" ...	32 "
102	Elaine ...	Victoria ...	" ...	...	Ireland ...	70 "
102	Hamilton ...	Tasmania...	" ...	...	" ...	Not stated
101	Murrurundi ...	N.S.W. ...	" ...	...	" ...	80 years
101	Byron Bay ...	" ...	" ...	...	" ...	26 "
101	Townsville ...	Queensland	" ...	...	" ...	70 "
101	Woodside ...	S. Australia	Fractured femur	...	England ...	57 "
100	Stroud ...	N.S.W. ...	Bronchitis ...	...	N.S.W. ...	Native
100	Coburg ...	Victoria ...	Influenza ...	...	Scotland ...	50 years
100	Caulfield ...	" ...	Senile decay ...	...	Ireland ...	Not stated
100	Creswick ...	" ...	" ...	...	England ...	48 years

## 11. Length of Residence in the Commonwealth of Persons who Died in 1910.—

The length of residence in the Commonwealth of all persons whose deaths were registered in the year 1910 has been tabulated for all the States, and a summary of the results is shewn below :—

## LENGTH OF RESIDENCE IN COMMONWEALTH OF PERSONS WHO DIED IN 1910.

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in the C'wealth...	14,113	12,099	26,212	Resident 25 to 29 years	861	504	1,365
Resident under 1 year	211	62	273	" 30 to 34 "	873	371	1,244
" 1 year ...	93	26	119	" 35 to 39 "	479	290	769
" 2 years ...	73	17	90	" 40 to 44 "	789	512	1,301
" 3 " ...	44	15	59	" 45 to 49 "	967	669	1,636
" 4 " ...	39	16	55	" 50 to 54 "	1,594	1,205	2,799
" 5 " ...	45	8	53	" 55 to 59 "	1,508	1,321	2,829
" 6 " ...	27	8	35	" 60 to 64 "	604	544	1,148
" 7 " ...	35	10	45	" 65 yrs. & over	387	424	811
" 8 " ...	40	5	45	Length of residence not stated...	2,171	737	2,908
" 9 " ...	27	18	45				
" 10 to 14 years...	216	73	289				
" 15 to 19 " ...	247	114	361				
" 20 to 24 " ...	711	388	1,099	Total ...	26,154	19,436	45,590

12. *Birthplaces of Persons who Died in 1910.*—In the following table are shewn the birthplaces of persons whose deaths were registered in 1910:—

### BIRTHPLACES OF PERSONS WHO DIED IN 1910.

#### COMMONWEALTH

Birthplaces.	Males.	Females.	Total.	Birthplaces.	Males.	Females.	Total.
New South Wales ...	5,384	4,577	9,961	Afghanistan ...	2	...	2
Victoria ...	4,342	3,719	8,061	Arabia ...	1	...	1
Queensland ...	1,362	1,151	2,513	Ceylon ...	5	...	5
South Australia ...	1,447	1,200	2,647	China ...	303	2	305
Western Australia ...	595	509	1,104	Dutch East Indies ...	22	1	23
Tasmania ...	983	943	1,926	India ...	67	30	97
				Japan ...	58	1	59
				Malay States ...	7	...	7
				Philippine Islands ...	9	...	9
New Zealand ...	110	83	193	Straits Settlements ...	7	1	8
				Syria ...	10	6	16
Austria-Hungary ...	30	3	33				
Belgium ...	6	1	7	Africa (so described)	1	...	1
Channel Islands ...	16	13	29	Azores ...	1	...	1
Denmark ...	77	20	97	Canary Islands ...	...	1	1
England ...	5,122	3,077	8,199	Cape of Good Hope ...	3	7	10
Finland ...	20	1	21	Cape Verde Islands ...	1	...	1
France ...	59	17	76	Egypt ...	1	...	1
Germany ...	597	272	869	Mauritius ...	14	4	18
Gibraltar ...	1	1	2	Natal ...	...	1	1
Greece ...	12	1	13	Reunion ...	2	1	3
Ireland ...	2,531	2,397	4,928	Seychelles ...	1	...	1
Iceland ...	1	...	1	S. Africa (so described)	17	9	26
Isle of Man ...	12	5	17	St. Helena ...	1	2	3
Italy ...	57	8	65	Transvaal ...	...	1	1
Malta ...	6	2	8	Zanzibar ...	1	...	1
Netherlands ...	10	1	11				
Norway ...	54	5	59				
Portugal ...	7	3	10				
Rumania ...	2	...	2				
Russia ...	33	11	44	Fiji ...	4	2	6
Scotland ...	1,467	994	2,461	Hawaii ...	1	...	1
Spain ...	7	3	10	Loyalty Islands ...	1	...	1
Sweden ...	102	7	109	New Caledonia ...	5	...	5
Switzerland ...	54	5	59	New Guinea ...	27	1	28
Turkey ...	1	1	2	New Hebrides ...	2	1	3
Wales ...	127	73	200	Samoa ...	1	1	2
				Solomon Islands ...	1	1	2
				S. Sea Is. (so described)	39	3	42
Canada ...	46	10	56				
Mexico ...	1	...	1	At Sea ...	45	39	84
Newfoundland ...	4	1	5				
United States ...	103	26	129	Not stated...	672	173	845
West Indies ...	28	4	32				
Brazil ...	4	2	6				
Chile ...	1	1	2				
S. America (so desc'd)	1	1	2	Total Deaths ...	26,154	19,436	45,590

18. Occupations of Male Persons who Died in 1910.—Information as to the occupations of the 26,154 males who died in the Commonwealth in 1910, is contained in the following statement:—

## OCCUPATIONS OF DECEASED MALES, 1910.

## COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
<b>CLASS I.—PROFESSIONAL.</b>		Groceries, drinks, narcotics, and stimulants ... .. 166	
General Government ... ..	102	Living animals... ..	48
Local Government ... ..	18	Leather, hides, etc. ... ..	3
Defence ... ..	41	Wool and tallow ... ..	11
Law and order ... ..	168	Hay, corn, etc. ... ..	32
Religion ... ..	91	Timber ... ..	19
Charity ... ..	1	Wood and coal ... ..	21
Health ... ..	128	Glass and earthenware ... ..	2
Literature ... ..	35	Gold, silver, and precious stones ... ..	1
Science ... ..	10	Ironmongery ... ..	23
Civil and mechanical engineering, architecture and surveying ... ..	69	Merchants, etc. ... ..	175
Education ... ..	104	Dealers and hawkers ... ..	100
Fine arts ... ..	30	Agents and brokers ... ..	97
Music ... ..	28	Clerks, bookkeepers, etc. ... ..	440
Amusements ... ..	65	Commercial travellers and salesmen ... ..	155
Total Professional ... ..		Others engaged in commercial pursuits ... ..	64
		Speculators on chance events ... ..	6
		Storage ... ..	—
<b>CLASS II.—DOMESTIC.</b>		Total Commercial ... .. 1,937	
Hotelkeepers and assistants ... ..	264	<b>CLASS IV.—TRANSPORT AND COMMUNICATION.</b>	
Others engaged in providing board and lodging... ..	34	Railway traffic ... ..	293
House servants ... ..	134	Tramway traffic ... ..	29
Coachmen and grooms ... ..	79	Road traffic ... ..	419
Hairdressers ... ..	47	Sea and river traffic ... ..	454
Laundrymen ... ..	8	Postal service ... ..	42
Others engaged in domestic occupations ... ..	95	Telegraph and telephone service ... ..	27
Total Domestic ... ..		Messengers, etc. ... ..	14
		Total Transport & Communication ... .. 1,278	
<b>CLASS III.—COMMERCIAL.</b>		<b>CLASS V.—INDUSTRIAL.</b>	
Banking and finance ... ..	59	Books and publications ... ..	126
Insurance and valuation ... ..	53	Musical instruments ... ..	11
Land and household property ... ..	25	Prints, pictures, and art materials ... ..	14
Books, publications and advertising ... ..	22	Ornaments and small wares ... ..	13
Musical instruments ... ..	2	Sports and games ... ..	1
Ornaments and small wares ... ..	1	Watches and clocks ... ..	31
Surgical instruments ... ..	1	Surgical instruments ... ..	1
Machines, tools, and implements ... ..	4	Arms and ammunition ... ..	3
Carriages and vehicles ... ..	1	Engines, machines, tools, etc. ... ..	110
Ships and boats ... ..	2	Carriages and vehicles ... ..	91
Furniture ... ..	7	Harness, saddlery, and leatherware ... ..	78
Chemicals ... ..	2	Ships, boats, and equipment ... ..	65
Paper and stationery ... ..	5	Furniture ... ..	69
Textile fabrics ... ..	113	Building material ... ..	67
Dress ... ..	13	Chemicals ... ..	7
Animal food ... ..	203		
Vegetable food ... ..	61		

## OCCUPATIONS OF DECEASED MALES, 1910—Continued.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Textile fabrics ... ..	10	CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC.	
Dress ... ..	362	Agricultural ... ..	2,617
Fibrous materials ... ..	3	Pastoral ... ..	663
Animal food ... ..	15	Dairying ... ..	100
Vegetable food ... ..	140	Fisheries, capture or destruction of wild animals, or acquisition of products yielded thereby ...	176
Groceries, drinks, narcotics, and stimulants ... ..	49	Forestry ... ..	64
Wool-scouring, soap, and candles	68	Water conservation and supply ...	20
Workers in wood not elsewhere classed ... ..	8	Mines and quarries ... ..	1,598
Fodder ... ..	2		
Stone, clay, glass ... ..	46	Total Primary Producers ... ..	5,238
Jewellery and precious stones ...	36		
Metals, other than gold and silver	384	CLASS VII.—INDEFINITE.	
Gas, electric lighting ... ..	30	Independent means, etc. ... ..	1,018
Buildings—		Undefined or unknown ... ..	638
Builders ... ..	90		
Stonemasons ... ..	94	Total Indefinite ... ..	1,656
Bricklayers ... ..	75		
Carpenters ... ..	466	CLASS VIII.—DEPENDENTS.	
Plasterers ... ..	35	Dependent relatives (including persons under 20 years of age with no specified occupation) ...	7,399
Painters and glaziers ... ..	183	Dependent upon the State or upon public or private support ...	200
Plumbers ... ..	66		
Others ... ..	2	Total Dependents ... ..	7,599
Roads, railways, and earthworks ...	34		
Disposal of the dead ... ..	11	Total Male Deaths ... ..	26,154
Disposal of refuse ... ..	25		
Other industrial workers—			
Manufacturers ... ..	16		
Engineers, firemen ... ..	317		
Machinists ... ..	16		
Contractors ... ..	143		
Labourers, undefined ... ..	3,532		
Total Industrial ... ..	6,895		

14. **Index of Mortality.**—The death rates so far shewn are crude rates, i.e., they simply shew the number of deaths per thousand of mean population, without taking the age constitution of that population into consideration. It is, however, a well-known fact that the death rate and age constitution of a people are intimately related, thus, other conditions being equal, the death rate of a country will be lower if it contain a large percentage of young people (not infants). In order to have a comparison of the mortality of various countries on a uniform basis, so far as age constitution is concerned, the International Statistical Institute in its 1895 session recommended the universal adoption of the population of Sweden in five age-groups, as ascertained at the Census of 1890, as the standard population by which this "Index of Mortality," as distinguished from the crude death rate, should be ascertained. The calculation for 1910 is shewn below for each of the six States and for the Commonwealth, the distribution of the mean population of 1910 into age-groups being in accordance with the distribution as found at the Census of 1911:—

## INDEX OF MORTALITY, 1910.—(STATES AND COMMONWEALTH.)

Age-Group.	Mean Population, 1910, distributed according to Results of Census of 1911.	Number of Deaths, 1910.	No. of Deaths per 1000 of Mean Population, 1910, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality.
<b>NEW SOUTH WALES.</b>					
Under 1 year ... ..	44,886	3,396	75.66	25.5	1.93
1 year and under 20 ... ..	643,092	2,068	3.21	398.0	1.28
20 years " 40 ... ..	547,062	2,188	4.00	269.6	1.08
40 " 60 ... ..	295,397	3,064	10.37	192.3	1.99
60 " and upwards ... ..	102,553	5,442	53.07	114.6	6.08
Total ... ..	1,632,990	16,158	9.89	1,000.0	12.36
<b>VICTORIA.</b>					
Under 1 year ... ..	30,342	2,417	79.66	25.5	2.03
1 year and under 20 ... ..	493,645	1,487	3.01	398.0	1.20
20 years " 40 ... ..	405,973	1,832	4.51	269.6	1.22
40 " 60 ... ..	258,451	2,738	10.59	192.3	2.04
60 " and upwards ... ..	94,066	6,258	66.53	114.6	7.62
Total ... ..	1,282,477	14,732	11.49	1,000.0	14.11
<b>QUEENSLAND.</b>					
Under 1 year ... ..	15,997	1,017	63.57	25.5	1.62
1 year and under 20 ... ..	242,351	752	3.10	398.0	1.23
20 years " 40 ... ..	193,829	931	4.80	269.6	1.29
40 " 60 ... ..	105,092	1,238	11.78	192.3	2.27
60 " and upwards ... ..	34,322	1,806	52.62	114.6	6.03
Total ... ..	591,591	5,744	9.71	1,000.0	12.44
<b>SOUTH AUSTRALIA.</b>					
Under 1 year ... ..	10,276	748	72.79	25.5	1.86
1 year and under 20 ... ..	156,407	419	2.68	398.0	1.07
20 years " 40 ... ..	131,962	604	4.56	269.6	1.23
40 " 60 ... ..	74,174	818	11.03	192.3	2.12
60 " and upwards ... ..	28,284	1,507	53.28	114.6	6.11
Total ... ..	401,103	4,096	10.21	1,000.0	12.39
<b>WESTERN AUSTRALIA.</b>					
Under 1 year ... ..	7,255	593	81.74	25.5	2.08
1 year and under 20 ... ..	99,249	413	4.16	398.0	1.66
20 years " 40 ... ..	99,517	519	5.22	269.6	1.41
40 " 60 ... ..	54,126	665	12.29	192.3	2.36
60 " and upwards ... ..	10,872	550	50.59	114.6	5.80
Total ... ..	271,019	2,740	10.11	1,000.0	13.31
<b>TASMANIA.</b>					
Under 1 year ... ..	5,369	568	105.79	25.5	2.78
1 year and under 20 ... ..	81,325	296	3.64	398.0	1.45
20 years " 40 ... ..	58,422	278	4.76	269.6	1.28
40 " 60 ... ..	33,951	331	9.75	192.3	1.87
60 " and upwards ... ..	11,938	647	54.20	114.6	6.21
Total ... ..	191,005	2,120	11.10	1,000.0	13.59
<b>COMMONWEALTH.</b>					
Under 1 year ... ..	114,125	8,739	76.57	25.5	1.95
1 year and under 20 ... ..	1,716,069	5,435	3.17	398.0	1.26
20 years " 40 ... ..	1,436,765	6,352	4.42	269.6	1.19
40 " 60 ... ..	821,191	8,854	10.78	192.3	2.07
60 " and upwards ... ..	282,035	16,210	57.48	114.6	6.59
Total ... ..	4,370,185	45,590	10.43	1,000.0	13.06

NOTE.—The small number of persons whose ages were not ascertained at the 1911 Census have been proportionately distributed among the various age-groups, and the same plan has been followed in regard to the 84 persons who died in 1910, and whose ages were not stated in the certificates of death.

It will be seen that Victoria and Tasmania have, respectively, the highest and second highest index and crude rates, while New South Wales has the lowest index and second lowest crude rate. Queensland with the lowest crude rate has fallen to the third place in the index of mortality. The range of the indexes is slightly less than that of the crude death rates, thus, while the latter in 1910 rose from 9.71 per thousand in Queensland to 11.49 per thousand in Victoria, a range of 1.78 per thousand, the indexes varied from 12.36 per thousand in New South Wales to 14.11 per thousand in Victoria, a range of 1.75 per thousand.

The tabulated Indexes of Mortality for the years 1902 to 1909, which appeared in Year Book No. 4, p. 198, have been omitted. They will, if possible, be given in the Appendix of this Volume, or, failing this, in the next issue of the Year Book, with the proper corrections for ages according to the census of 1911.

It may here be mentioned that, in a series of papers recently communicated to the Australasian Medical Congress of 1911,\* which met in Sydney in September last, the following diseases were specially considered in various aspects, viz.:—Infantile mortality, pulmonary tuberculosis and cancer—the two diseases combined, and the age incidence of both; typhoid fever and whooping cough; diarrhoea, diphtheria, and croup; measles and scarlet fever. The fluctuation for cancer, pulmonary tuberculosis, typhoid, whooping cough, diarrhoea, diphtheria, croup, etc., for the various months of the year was also ascertained, as well as the number of persons dying at different ages in the case of diarrhoea, dysentery, enteritis, and pulmonary tuberculosis; and the frequency, according to age of deaths, from pulmonary tuberculosis. These various matters will be dealt with hereinafter *seriatim*.

15. **Causes of Death.**—(i.) *Changes in Classification from 1903 to 1906.* The causes of death were classified in all the States of the Commonwealth to the end of 1903 according to the system originally devised by Dr. William Farr, and modified in 1886 by Dr. William Ogle. A conference of the State Statisticians, held at Hobart in January, 1902, decided to substitute for that system the classification adopted since 1901 by the Registrar-General of England. While New South Wales, Queensland, and Tasmania remodelled their vital statistics on that plan, Victoria, South Australia, and Western Australia continued to tabulate according to the Farr-Ogle system, and a comparison of the causes of death in the six States during the years 1903, 1904, 1905, and 1906 is, therefore, a matter of extreme difficulty. The differences in tabulation will be seen in the following statement:—

#### TABULATION OF CAUSES OF DEATH.

State.	1902.	1903.	1904.	1905.	1906.	State.	1902.	1903.	1904.	1905.	1906.
N.S.W. ...	Old	Old	Old	New	International	S. Australia	Old	Old	Old	Old	Old
Victoria ...	Old	Old	Old	Old	Old	W. Australia	Old	Old	Old	Old	Old
Queensland	Old	New	New	New	New	Tasmania ...	Old	New	New	New	New

Old= Farr-Ogle classification. New= New classification by Registrar-General of England.  
International—See next paragraph.

(ii.) *The Classification of the International Institute of Statistics.* At a conference held in Melbourne in November and December, 1906, the Commonwealth Statistician

\* By the Commonwealth Statistician, in his capacity as honorary member. The papers *in extenso* will appear in the transactions of the Congress itself, to which reference should be made for detailed information.

recommended the adoption of the classification of the International Institute of Statistics, generally known as the Bertillon Index, and after some discussion that recommendation was accepted, a course which has met with wide approval in medical circles. This index, as also the one now used by the Registrar-General of England, is based on the original Farr-Ogle classification, but approximates more closely to the present English system than to the older one. The chief advantage possessed by the international classification is that it presents a very extensive field for comparison, the countries which have adopted it representing a population which is probably not less than 200,000,000. Commencing with 1910, the statistics of the United Kingdom will also be compiled in accordance with this system. Provision is made for a decennial revision of the classification, as it has been recognised that finality is impossible in the present state of medical science. The committee charged with the first revision met in Paris in July, 1909, and, in accordance with a resolution of the Australasian Medical Congress, held in Melbourne in October, 1908, a number of recommendations were made to it, dealing particularly with tropical diseases occurring in the northern parts of Australia. Most of these recommendations, together with many others, have been adopted. The number of categories is the same as in the 1900 nomenclature, but these have been subdivided into 189 causes instead of 179, the ten additional causes being obtained by shewing deaths from violence in greater detail than formerly.

The detailed classification groups causes of death under 179 (increased to 189 by the revised classification) different headings, in fourteen categories, as follows:—

- |                                                                 |                                                 |
|-----------------------------------------------------------------|-------------------------------------------------|
| i. General Diseases.                                            | viii. Diseases of the Skin and Cellular Tissue. |
| ii. Diseases of the Nervous System and Organs of Special Sense. | ix. Diseases of the Organs of Locomotion.       |
| iii. Diseases of the Circulatory System.                        | x. Malformations.                               |
| iv. Diseases of the Respiratory System.                         | xi. Infancy.                                    |
| v. Diseases of the Digestive System.                            | xii. Old Age.                                   |
| vi. Diseases of the Genito-urinary System and Adnexa.           | xiii. Violence.                                 |
| vii. Puerperal Condition.                                       | xiv. Ill-defined Diseases.                      |

(iii.) *Compilation of Vital Statistics for 1907, 1908, 1909 and 1910 in Commonwealth Bureau.* The vital statistics of the six Commonwealth States for 1907, 1908, 1909 and 1910 have been tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in the majority of the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iv.) *Classification of Causes of Death, 1907 to 1910, according to Abridged Bertillon Index.* An abridged classification, which enumerates thirty-five diseases and groups of diseases (increased to thirty-eight by the revised classification), is in use in many European and American States, while the Commonwealth Statistics for 1907, 1908, and 1909 have been compiled on the detailed classification of 179 headings and 1910 for 189 headings. A table has been compiled shewing the causes of death according to the abridged classification, so that the results may be compared with those of countries which use the abridged index.

The compilations for 1907, 1908, 1909, and 1910 will be found in full in "Bulletins Nos. 8, 14, 20, and 25 of Population and Vital Statistics"; here it will suffice to give the abridged classification under thirty-eight headings for the year 1910:—



## CAUSES OF DEATH—COMMONWEALTH, 1910.

## (a) MALES.

Cause.	N.S.W.	Vic.	Q'land.	S.Aust.	W.Aus.	Tas.	C'wlth.
1 Typhoid Fever ...	193	86	63	17	32	23	414
2 Typhus ...	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia ...	2	—	23	12	11	—	48
4 Small-pox ...	1	1	—	—	—	—	2
5 Measles ...	42	15	7	—	2	—	66
6 Scarlet Fever ...	13	10	1	1	1	1	27
7 Whooping Cough ...	92	40	42	16	22	26	238
8 Diphtheria and Croup ...	118	62	34	24	31	12	281
9 Influenza ...	61	54	36	19	11	4	185
10 Asiatic Cholera ...	—	—	—	—	—	—	—
11 Cholera Nostras ...	—	—	—	1	—	—	1
12 Other Epidemic Diseases ...	19	17	52	7	18	—	113
13 Tuberculosis of the Lungs ...	588	551	212	162	145	53	1,711
14 Tuberculosis of the Meninges ...	37	46	3	13	6	2	107
15 Other forms of Tuberculosis ...	61	71	25	19	8	10	194
16 Cancer and other Malignant Tumours ...	617	555	230	158	74	62	1,696
17 Simple Meningitis ...	135	77	54	34	18	12	330
18 Congestion, Hæmorrhage, and Softening of the Brain ...	301	292	125	67	38	41	864
19 Organic Diseases of the Heart ...	848	780	337	217	116	71	2,369
20 Acute Bronchitis ...	109	45	27	27	16	12	236
21 Chronic Bronchitis ...	176	204	40	41	18	11	490
22 Pneumonia ...	356	333	110	76	51	60	986
23 Other Diseases of the Respiratory System (Tuberculosis excepted) ...	279	332	138	52	58	17	926
24 Diseases of the Stomach (Cancer excepted) ...	35	51	33	14	13	6	152
25 Diarrhoea and Enteritis (children under two years only) ...	660	540	161	132	116	104	1,713
26 Appendicitis and Typhlitis ...	65	56	24	15	15	6	181
27 Hernia, Intestinal Obstructions ...	81	81	27	17	19	8	233
28 Cirrhosis of the Liver ...	77	68	41	21	20	7	234
29 Nephritis and Bright's Disease ...	394	349	156	98	60	20	1,077
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ...	—	—	—	—	—	—	—
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ...	—	—	—	—	—	—	—
32 Other Puerperal Accidents of Pregnancy and Confinement ...	—	—	—	—	—	—	—
33 Congenital Debility and Malformations ...	713	524	201	169	121	121	1,840
34 Senile Debility... ..	666	694	188	156	86	115	1,905
35 Violence ...	761	506	404	201	187	69	2,128
36 Suicide ...	132	100	100	27	63	10	432
37 Other Diseases... ..	1,562	1,474	678	376	327	173	4,590
38 Unspecified or Ill-defined Diseases	145	64	22	46	57	42	376
Total—Males ...	9,339	8,128	3,594	2,235	1,760	1,098	26,154

## CAUSES OF DEATH—COMMONWEALTH, 1910.

## (b) FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W.Aus.	Tas.	C'wlth.
1 Typhoid Fever ... ..	98	55	36	8	19	18	234
2 Typhus ... ..	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia ... ..	—	—	1	4	2	—	7
4 Small-pox ... ..	—	2	—	—	—	—	2
5 Measles ... ..	41	12	5	—	—	—	58
6 Scarlet Fever ... ..	10	17	—	1	1	2	31
7 Whooping Cough ... ..	80	33	42	26	28	29	238
8 Diphtheria and Croup ... ..	120	52	36	22	37	7	274
9 Influenza ... ..	54	46	21	7	7	4	139
10 Asiatic Cholera ... ..	—	—	—	—	—	—	—
11 Cholera Nostras ... ..	—	—	—	—	—	—	—
12 Other Epidemic Diseases ... ..	17	16	22	6	7	3	71
13 Tuberculosis of the Lungs ... ..	456	489	91	170	65	77	1,348
14 Tuberculosis of the Meninges ... ..	42	33	8	13	3	9	108
15 Other forms of Tuberculosis ... ..	48	61	9	21	6	4	149
16 Cancer and other Malignant Tumours ... ..	549	516	160	164	61	59	1,509
17 Simple Meningitis ... ..	79	66	36	25	14	17	237
18 Congestion, Hæmorrhage, and Softening of the Brain ... ..	287	330	84	80	26	33	840
19 Organic Diseases of the Heart ... ..	648	774	210	237	68	72	2,009
20 Acute Bronchitis ... ..	95	36	22	15	10	6	184
21 Chronic Bronchitis ... ..	126	152	38	31	6	16	369
22 Pneumonia ... ..	202	230	50	49	35	60	626
23 Other Diseases of the Respiratory System (Tuberculosis excepted) ... ..	236	217	75	37	37	16	618
24 Diseases of the Stomach (Cancer excepted) ... ..	48	45	18	23	8	3	145
25 Diarrhœa and Enteritis (children under two years only) ... ..	553	428	148	103	104	96	1,432
26 Appendicitis and Typhlitis ... ..	44	49	12	14	7	8	134
27 Hernia, Intestinal Obstructions ... ..	57	56	15	22	13	2	165
28 Cirrhosis of the Liver ... ..	38	60	21	4	4	7	134
29 Nephritis and Bright's Disease ... ..	238	252	87	62	21	34	694
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ... ..	52	55	15	13	12	2	149
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ... ..	104	49	23	19	14	9	218
32 Other Puerperal Accidents of Pregnancy and Confinement ... ..	126	102	73	32	19	21	373
33 Congenital Debility and Malformations ... ..	502	394	170	120	89	97	1,372
34 Senile Debility ... ..	428	589	110	180	35	106	1,448
35 Violence ... ..	208	201	80	49	51	21	610
36 Suicide ... ..	24	30	14	6	7	3	84
37 Other Diseases... ..	1,130	1,108	403	270	146	148	3,205
38 Non-specified or Ill-defined Diseases ... ..	79	49	15	28	18	33	222
Total—Females ... ..	6,819	6,604	2,150	1,861	980	1,022	19,436

## CAUSES OF DEATH—COMMONWEALTH, 1910.

(c) TOTAL, MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.	Tas.	C'wth.
1 Typhoid Fever ...	291	141	99	25	51	41	648
2 Typhus ...	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia ...	2	—	24	16	13	—	55
4 Small-pox ...	1	3	—	—	—	—	4
5 Measles ...	83	27	12	—	2	—	124
6 Scarlet Fever ...	23	27	1	2	2	3	58
7 Whooping Cough ...	172	73	84	42	50	55	476
8 Diphtheria and Croup ...	238	114	70	46	68	19	555
9 Influenza ...	115	100	57	26	18	8	324
10 Asiatic Cholera ...	—	—	—	—	—	—	—
11 Cholera Nostras ...	—	—	—	1	—	—	1
12 Other Epidemic Diseases ...	36	33	74	13	25	3	184
13 Tuberculosis of the Lungs	1,044	1,040	303	332	210	130	3,059
14 Tuberculosis of the Meninges	79	79	11	26	9	11	215
15 Other forms of Tuberculosis	109	132	34	40	14	14	343
16 Cancer and other Malignant Tumours ...	1,166	1,071	390	322	135	121	3,205
17 Simple Meningitis ...	214	143	90	59	32	29	567
18 Congestion, Hæmorrhage, and Softening of the Brain ...	588	622	209	147	64	74	1,704
19 Organic Diseases of the Heart	1,496	1,554	547	454	184	143	4,378
20 Acute Bronchitis ...	204	81	49	42	26	18	420
21 Chronic Bronchitis...	302	356	78	72	24	27	859
22 Pneumonia ...	558	563	160	125	86	120	1,612
23 Other Diseases of the Respiratory System (Phthisis excepted) ...	515	599	213	89	95	33	1,544
24 Diseases of the Stomach (Cancer excepted) ...	83	96	51	37	21	9	297
25 Diarrhœa and Enteritis (children under two years only)	1,213	968	309	235	220	200	3,145
26 Appendicitis and Typhlitis ...	109	105	36	29	22	14	315
27 Hernia, Intestinal Obstructions	138	137	42	39	32	10	398
28 Cirrhosis of the Liver ...	115	128	62	25	24	14	368
29 Nephritis and Bright's Disease	632	601	243	160	81	54	1,771
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ...	52	55	15	13	12	2	149
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	104	49	23	19	14	9	218
32 Other Puerperal Accidents of Pregnancy and Confinement	126	102	73	32	19	21	373
33 Congenital Debility and Malformations ...	1,215	918	371	289	210	218	3,221
34 Senile Debility ...	1,094	1,283	298	336	121	221	3,353
35 Violence ...	969	707	484	250	238	90	2,738
36 Suicide ...	156	130	114	33	70	13	516
37 Other Diseases ...	2,692	2,582	1,081	646	473	321	7,795
38 Non-specified or Ill-defined Diseases ...	224	113	37	74	75	75	598
Total—Males and Females...	16,158	14,732	5,744	4,096	2,740	2,120	45,590

(d) The classification for the years 1907, 1908, and 1909 is shewn for the Commonwealth in the following table, and for purposes of comparison the figures for the year 1910 have been repeated from the preceding table. Male and female deaths for 1905,

1906, and 1907 are shewn separately on page 237 of the second issue, those for 1908 on pages 211 and 212 of the third issue, and for 1909 on pages 200 and 201 of the fourth issue of this Year Book, while the figures for 1910 are given on the two preceding pages.

The figures for 1907, 1908, and 1909, which were compiled under thirty-five headings, have here been distributed among the corresponding headings of the revised classification.

### CAUSES OF DEATH—COMMONWEALTH, 1907 to 1910.

#### MALES AND FEMALES.

Cause.	1907.	1908.	1909.	1910.
1 Typhoid Fever ... ..	564	736	661	648
2 Typhus ... ..	...	...	...	...
3 Intermittent Fever & Malarial Cachexia ... ..	42	52	59	55
4 Small-pox ... ..	...	...	1	4
5 Measles ... ..	147	125	31	124
6 Scarlet Fever ... ..	37	63	74	58
7 Whooping Cough ... ..	1,070	249	257	476
8 Diphtheria and Croup ... ..	403	421	435	555
9 Influenza ... ..	902	588	326	324
10 Asiatic Cholera ... ..	...	...	...	...
11 Cholera Nostras ... ..	5	4	1	1
12 Other Epidemic Diseases ... ..	276	268	221	184
13 Tuberculosis of the Lungs ... ..	3,206	3,409	3,169	3,059
14 Tuberculosis of the Meninges ... ..	237	205	220	215
15 Other forms of Tuberculosis ... ..	415	352	332	343
16 Cancer and other Malignant Tumours ... ..	2,940	2,921	3,112	3,205
17 Simple Meningitis ... ..	648	676	616	567
18 Congestion, Hæmorrhage, and Softening of the Brain ... ..	1,901	1,867	1,665	1,704
19 Organic Diseases of the Heart ... ..	3,801	4,066	3,940	4,378
20 Acute Bronchitis ... ..	514	412	422	420
21 Chronic Bronchitis ... ..	844	818	897	859
22 Pneumonia ... ..	1,788	1,871	1,752	1,612
23 Other Diseases of the Respiratory System (Tuberculosis excepted) ... ..	1,689	1,569	1,565	1,544
24 Diseases of the Stomach (Cancer excepted) ... ..	334	308	272	297
25 Diarrhœa and Enteritis (Children under two years only) ... ..	2,733	3,236	2,803	3,145
26 Appendicitis and Typhlitis ... ..	305	293	344	315
27 Hernia, Intestinal Obstructions ... ..	411	389	396	398
28 Cirrhosis of the Liver ... ..	325	362	331	368
29 Nephritis and Bright's Disease ... ..	1,760	1,864	1,799	1,771
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ... ..	128	159	130	149
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ... ..	179	202	201	218
32 Other Puerperal Accidents of Pregnancy and Confinement ... ..	435	404	376	373
33 Congenital Debility and Malformations ... ..	3,038	2,973	2,905	3,221
34 Senile Debility ... ..	3,136	3,466	3,194	3,353
35 Violence ... ..	2,679	2,922	2,664	2,738
36 Suicide ... ..	461	497	495	516
37 Other Diseases ... ..	6,677	7,417	7,419	7,795
38 Unspecified or Ill-defined Diseases ... ..	1,275	1,262	1,087	598
Total ... ..	45,305	46,426	44,172	45,590

16. **Certification of Deaths.**—Information was obtained in 1910 as to the persons by whom the 45,590 deaths which occurred in the Commonwealth were certified. The

result of the enquiry shews that approximately 88.1 per cent. (in 1909, 87.7 per cent.) were certified by medical practitioners, and 11.1 per cent. (in 1909, 11.5 per cent.) by coroners after inquests, or magisterial enquiries, while in 0.8 per cent. (in 1909, 0.8 per cent.) of the cases there was either no certificate given, or particulars were not forthcoming. The results are shewn in detail in Bulletin No. 25; a short summary will therefore suffice here:—

### CERTIFICATION OF DEATHS, COMMONWEALTH, 1910.

Death Certified by—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Medical practitioner ...	14,200	12,908	5,094	3,666	2,324	1,960	40,152
Coroner ... ..	1,942	1,804	410	397	366	157	5,076
Not certified or not stated ...	16	20	240	33	50	3	362
Total Deaths ... ..	16,158	14,732	5,744	4,096	2,740	2,120	45,590

Of the cases certified by coroners, violent deaths numbered 2477, ill-defined causes 302, organic heart disease 419, senile decay 352, congenital debility 189, diarrhœa and enteritis 135, Bright's disease 65, congestion and hæmorrhage of brain 114, tuberculosis of lungs 80, pneumonia 107, infantile convulsions 74, broncho-pneumonia 28, diseases of arteries, aneurisms, etc. 58, and acute and chronic alcoholism 36; a total of 4436 out of 5076.

Of uncertified causes of death, violent deaths numbered 56, senile debility 46, ill-defined causes 32, infantile convulsions 19, congenital debility 51, diarrhœa and enteritis 11, tuberculosis of the lungs 8, organic heart disease 14, and pneumonia 8; a total of 245 out of 362.

**17. Deaths from Special Causes.**—The table on p. 205 furnishes comparisons for the last four years only, and comparisons will, therefore, be restricted to that period.

(i.) *Typhoid Fever.* Deaths from typhoid fever were more numerous in 1908 than in 1907, numbering 736, against 564 in 1907. In 1909 the number fell to 661, and to 648 in 1910, of which 291 occurred in New South Wales, 141 in Victoria, 99 in Queensland, 25 in South Australia, 51 in Western Australia, and 41 in Tasmania.

(ii.) *Typhus.* The death of one woman was registered in 1906 in Victoria as being due to typhus, but this registration may have been due to an error in the death certificate, and the death may possibly have been one of typhoid (enteric) fever.

(iii.) *Intermittent Fever and Malarial Cachexia.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory, 24 out of 55 deaths registered in 1910 having occurred in Queensland, and 16 in the Northern Territory.

(iv.) *Small-pox.* No deaths from small-pox occurred during the two years 1907 and 1908, but in 1909 one death was registered in Western Australia. In 1910 one death was registered in New South Wales, and three in Victoria.

(v.) *Measles.* No serious epidemic of measles has occurred for several years; the deaths in 1908 were less numerous than in 1907, numbering 125, against 147. In 1909 the deaths numbered 31, while 124 were registered in 1910.

(vi.) *Scarlet Fever.* 58 deaths were registered in 1910, 23 of which occurred in New South Wales, and 27 in Victoria.

(vii.) *Whooping Cough*. A rather severe epidemic of whooping cough visited New South Wales in the early part of 1907, causing 592 deaths out of a total of 1070 registered in the Commonwealth. The deaths in 1908 fell to 249, with a slight increase to 257 in 1909, and a much greater increase to 476 in 1910.

(viii.) *Diphtheria and Croup*. Deaths in 1907, 403; in 1908, 421; in 1909, 435, and in 1910, 555, of which 238 occurred in New South Wales, 114 in Victoria, 70 in Queensland, and 68 in Western Australia.

(ix.) *Influenza*. This disease was rather more prevalent in 1907 than in the two previous years, the deaths numbering 902, against 428 and 539. Of the deaths occurring in 1907, 309 were registered in New South Wales, 275 in Victoria, and 209 in Queensland. The deaths in 1908 were 588; in 1909, 326, and 324 in 1910, of which 115 occurred in New South Wales, 100 in Victoria, and 57 in Queensland.

(x.) *Asiatic Cholera*. No cases of Asiatic cholera have ever occurred in the Commonwealth.

(xi.) *Cholera Nostras*. Isolated cases only of choleric form diarrhœa occurred in each of the four years.

(xii.) *Other Epidemic Diseases*. The number of deaths registered under this heading was 276 in 1907, 268 in 1908, 221 in 1909, and 184 in 1910. The list in 1910 includes the following diseases:—Dysentery 97, erysipelas 56, leprosy 13, of which 10 occurred in Queensland, other epidemic diseases, 18. Prior to 1910 beri beri was included in other epidemic diseases. The sixty cases occurring in 1910 have been included in No. 37 of the revised classification. Of the 41 deaths from leprosy in the years 1907 to 1910, 33 occurred in Queensland. There were no deaths from plague in the Commonwealth during 1910. In 1907, 48 deaths were registered; in 1908, 14 deaths; and in 1909, 13 deaths.

(xiii.) *Tuberculosis of the Lungs*. The deaths in 1910 numbered 3059, viz., 1711 males and 1348 females. The figures for 1907, 1908, and 1909 were 3206, 3409, and 3169 respectively. Of the deaths in 1910, 1044 occurred in New South Wales, 1040 in Victoria, 303 in Queensland, 332 in South Australia, 210 in Western Australia, and 130 in Tasmania. In accordance with the revised classification, 50 deaths from tuberculosis of the larynx have been included with tuberculosis of the lungs in 1910, instead of in class 15 in previous years. In the table on page 205 deaths from tuberculosis of the larynx have been included with tuberculosis of the lungs, so that the figures allow of correct comparison.

(xiii.a) *Tuberculosis of the Respiratory System*. Of the various forms of tuberculosis prevalent in the Commonwealth, that which has probably attracted the most attention and has been the subject of the widest comment is phthisis, or tuberculosis of the lungs. The intimate relation, however, between tuberculosis of the lungs and that of other parts of the respiratory system renders it desirable that all forms of tuberculosis of the respiratory system should be brought under one head for various investigations concerning the age incidence and duration of this disease.

In the matter of the age incidence of death from tuberculosis of the respiratory system, diagrams were given in Year Books 2, 3, and 4, pp. 239, 217, and 206 respectively, shewing the frequency of deaths at successive ages in England and Wales during 1906 (Fig. 1), and in the Commonwealth during 1907 (Fig. 2). These are now superseded and a fuller reference based on later results is made hereinafter to this and other diseases. The results given depended upon intercensal estimates of population, and these having now been adjusted to agree with the Census of 3rd April, 1911, some slight amendment of the figures is necessary.

The figures dealt with furnish the following death-rates from tuberculosis of the respiratory system for the years specified:—

Particulars.	Males.	Females.	Total.
ENGLAND AND WALES, 1906—			
Population ... ..	16,689,707	17,857,309	34,547,016*
Deaths from tuberculosis of the respiratory system ... ..	22,645	17,101	39,746
Death-rate per 100,000 of population ... ..	135.68	95.76	115.05
COMMONWEALTH OF AUSTRALIA, 1907—			
Population ... ..	2,141,727	1,982,002	4,123,729
Deaths from tuberculosis of the respiratory system ... ..	1,891	1,477	3,368
Death-rate per 100,000 of population ... ..	88.29	74.52	81.67

\* Not corrected to Census.

(xiv.) *Tuberculosis of the Meninges.* The number of deaths registered in 1907, 237; in 1908, 205; in 1909, 220; and in 1910, 215.

(xv.) *Other Forms of Tuberculosis.* Deaths numbered in 1907, 415; in 1908, 352; in 1909, 332; and in 1910, 343. The deaths in 1910 include the following forms of tuberculosis:—Tuberculosis of the peritonæum, 143; Pott's disease, 50; tuberculosis of other organs, 90; and disseminated tuberculosis, 60. Tuberculosis of the larynx (see paragraph xiii.)

(xv.a) *All Forms of Tuberculosis.* A complete tabulation of all the different tubercular diseases from which deaths occurred in 1910, will be found in Bulletin No. 25 of Population and Vital Statistics. Here it will suffice to show a few of the features of the tabulation mentioned. The total number of deaths due to tubercular diseases was 3617, viz., 2012 males and 1605 females. The following table shews the ages of these 3617 persons:—

#### AGES OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1910.

##### COMMONWEALTH.

Ages.	Male.	Female	Total.	Ages.	Male.	Female	Total.
Under 5 years ...	137	104	241	55 years and under 60	110	56	166
5 years and under 10	33	22	55	60 " " 65	85	36	121
10 " " 15	32	40	72	65 " " 70	51	27	78
15 " " 20	93	151	244	70 " " 75	37	15	52
20 " " 25	159	221	380	75 " " 80	17	8	25
25 " " 30	210	272	482	80 " " 85	6	3	9
30 " " 35	205	185	390	Age not stated ...	3	2	5
35 " " 40	205	169	374				
40 " " 45	197	132	329				
45 " " 50	242	99	341				
50 " " 55	190	63	253	Total Deaths ...	2,012	1,605	3,617

The length of residence in the Commonwealth of persons who died from tubercular diseases has been tabulated for the year 1910 for all the Commonwealth States, with the following results :—

**LENGTH OF RESIDENCE IN COMMONWEALTH  
OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1910.**

Length of Residence in Commonwealth.	Male.	Fem.	Total	Length of Residence in Commonwealth.	Male.	Fem.	Total.
Born in Commonwealth ...	1,286	1,353	2,639	Resident 10 yrs. & under 15	29	10	39
Resident under 1 year ...	26	3	29	"    15    "    under 20	30	9	39
"    1 year ...	22	6	27	"    20    "    over ...	412	170	582
"    2 years ...	19	2	21	Length of resid'ce not stated	132	43	175
"    3    "    ... ..	8	2	10				
"    4    "    ... ..	9	4	13				
"    5    "    & under 10	39	4	43	Total Deaths ...	2,012	1,605	3,617

There would not appear, therefore, to be much ground for the statement sometimes heard that many persons arrive in Australia in the last stages of consumption.

In order to shew the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are shewn in the following table, together with the percentage which deaths from tuberculosis bear on the total number of deaths registered :—

**DEATH RATES FROM TUBERCULOSIS AND PERCENTAGE ON TOTAL DEATHS  
COMMONWEALTH.**

State.	Death Rates* from Tuberculosis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.80	0.70	0.75	7.34	8.01	7.62
Victoria ...	1.05	0.90	0.97	8.22	8.83	8.49
Queensland ...	0.74	0.40	0.59	6.68	5.02	6.06
South Australia ...	0.95	1.04	0.99	8.68	10.96	9.72
Western Australia	1.03	0.63	0.86	9.03	7.55	8.50
Tasmania ...	0.67	0.96	0.81	5.92	8.81	7.31
Commonwealth	0.89	0.76	0.83	7.69	8.26	7.93

\* Number of deaths from tuberculosis per 1000 of mean population.

In the first issue of this book a series of figures was given shewing the rates of mortality from phthisis in various countries, and it was shewn that these ranged from 570 per million in New Zealand to 4415 per million in Hungary, with a rate of 808 for the Commonwealth. It is not considered necessary to repeat those figures here in detail, and it may suffice to state that while deaths from all tubercular diseases in the Commonwealth were 0.83 per thousand in 1910, they were 1.40 per thousand in Belgium in 1904; 1.65 per thousand in England and Wales in 1906; 1.80 per thousand in the Netherlands in 1906; 2.04 per thousand in the German Empire in 1905; and 2.72 per thousand in Switzerland in 1905. The Commonwealth occupies, therefore, a very enviable position in regard to tubercular diseases, when compared with European countries.

(xvi.) *Cancer and other Malignant Tumours.* Deaths from cancer shew a tendency to increase, the figures for 1907 being 2940 deaths; for 1908, 2921 deaths; for 1909,



3112 deaths; and 1910, 3205 deaths. Of the deaths registered in 1910, 1696 were those of males, viz., 617 in New South Wales, 555 in Victoria, 230 in Queensland, 158 in South Australia, 74 in Western Australia, and 62 in Tasmania; while 1509 were those of females; viz., 549 in New South Wales, 516 in Victoria, 160 in Queensland, 164 in South Australia, 61 in Western Australia, and 59 in Tasmania. Bulletin No. 25 contains a complete tabulation of the various types of cancer and of the seat of the disease, of which the following is a summary:—

#### DEATHS FROM CANCER, COMMONWEALTH, 1910.

Seat of Disease.	Male.	Female	Total.
Cancer, etc., of the buccal cavity ... ..	238	24	262
„ „ the stomach and liver ... ..	746	481	1,227
„ „ the peritonæum, the intestines, and the rectum ...	186	184	370
„ „ the female genital organs ... ..	...	305	305
„ „ the breast ... ..	...	210	210
„ „ the skin ... ..	64	34	98
„ „ other organs ... ..	462	271	733
Total Deaths ... ..	1,696	1,509	3,205

Of these deaths 1016 were described as cancer, 1309 as carcinoma, 158 as epithelioma, 388 as "malignant disease," 73 as "malignant tumour," 4 as neoplasm, 29 as "rodent ulcer," 211 as sarcoma, and 17 as scirrhus.

The ages of the 3205 persons who died from cancer in 1910, are shewn in the following table, from which it will be seen that while the ages below 35 are not by any means immune from the disease, the great majority of deaths occurred at ages from 35 upwards, the maximum being found in the age group 65 to 70.

#### AGES OF PERSONS WHO DIED FROM CANCER, 1910.

##### COMMONWEALTH.

Ages.	Males.	Female	Total.	Ages.	Males.	Female	Total.
Under 15 years ...	25	17	42	65 years and under 70	250	204	454
15 years and under 20	5	5	10	70 " " 75	218	160	378
20 " " 25	9	9	18	75 " " 80	173	140	313
25 " " 30	11	14	25	80 " " 85	85	62	147
30 " " 35	13	35	48	85 years and over ...	34	31	65
35 " " 40	34	60	94	Age not stated ...	2	...	2
40 " " 45	74	123	197				
45 " " 50	142	140	282				
50 " " 55	182	179	361				
55 " " 60	227	165	392				
60 " " 65	212	165	377				
				Total Deaths ...	1,696	1,509	3,205

A tabulation has been made of the occupations of the males who died from cancer, which the following is a summary:—

## OCCUPATION OF MALES WHO DIED FROM CANCER, 1910.

## COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class ... ..	79	Pastoral class ... ..	81
Domestic class ... ..	51	Working in mines and quarries...	95
Mercantile class ... ..	162	Other primary producers ... ..	19
Engaged in transport and communication ... ..	95	Independent means ... ..	82
Manufacturing class ... ..	169	Dependents ... ..	55
Engaged in building and construction ... ..	122	Occupation not stated ... ..	48
Indefinite industrial workers ... ..	341		
Agricultural class ... ..	297	Total Male Deaths ... ..	1,696

As the following tables shew, the death rates from cancer are below those for tubercular diseases in all the States (with the exception, however, of the female death rates in New South Wales and Queensland), but while the latter have a general tendency to decrease, the former have, on the contrary, shewn an increase in nearly every recent year.

## DEATH RATES\* FROM CANCER AND PERCENTAGE ON TOTAL DEATHS, 1910.

## COMMONWEALTH.

State.	Death Rates* from Cancer.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.72	0.70	0.71	6.61	8.05	7.22
Victoria ...	0.87	0.80	0.83	6.83	7.81	7.27
Queensland ...	0.71	0.59	0.66	6.40	7.44	6.79
South Australia...	0.77	0.83	0.80	7.07	8.81	7.86
Western Australia	0.48	0.52	0.50	4.20	6.22	4.93
Tasmania ...	0.64	0.63	0.63	5.65	5.77	5.71
Commonwealth	0.75	0.72	0.73	6.48	7.76	7.03

\* Number of deaths from Cancer per 1000 of mean population.

The table shewing the death rates from cancer in various countries, which was given in the first issue of this work, is not here repeated. It may, however, be stated that while the death rate of the Commonwealth from cancer in 1910 was 0.73 per thousand, that of Belgium in 1908 was 0.54; that of the German Empire in 1905, 0.80; that of England and Wales in 1909, 0.95; that of the Netherlands in 1909, 0.90; and that of Switzerland in 1908, 1.11 per thousand.

(xvii.) *Simple Meningitis.* The table shews 648 deaths in 1907, 676 deaths in 1908, 616 deaths in 1909, and 567 in 1910.

(xviii.) *Congestion, Hæmorrhage, and Softening of the Brain.* The deaths registered under this heading in 1907 were 1901, viz., 1038 males and 863 females; in 1908, 1867, viz., 991 males and 876 females; in 1909, 1665, viz., 869 males and 796 females; and in 1910, 1704, viz., 864 males and 840 females. The 1910 figures are made up of congestion and hæmorrhage of the brain—803 males, 778 females, total 1581; and softening of the brain—61 males, 62 females, total 123.

(xix.) *Organic Diseases of the Heart.* The number of deaths registered in 1910 was 4378, viz., 2369 males and 2009 females. Of these deaths, New South Wales was responsible for 848 males and 648 females; Victoria for 780 males and 774 females; Queensland for 337 males and 210 females; South Australia for 217 males and 237 females; Western Australia for 116 males and 68 females; and Tasmania for 71 males and 72 females. To the figures for 1910 correspond the following death rates and percentages to total deaths:—

**DEATH RATES\* FROM ORGANIC HEART DISEASE AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1910.**

State.	Death Rates* from Organic Heart Disease.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.99	0.83	0.92	9.08	9.50	9.26
Victoria ...	1.23	1.19	1.21	9.59	11.72	10.55
Queensland ...	1.04	0.78	0.92	9.38	9.77	9.52
South Australia ...	1.06	1.20	1.13	9.71	12.74	11.09
Western Australia	0.75	0.58	0.68	6.59	6.94	6.71
Tasmania ...	0.73	0.77	0.75	6.46	7.04	6.75
Commonwealth ...	1.04	0.96	1.00	9.06	10.34	9.60

\* Number of deaths from Organic Heart Disease per 1000 of mean population.

(xx.) *Acute Bronchitis.* The classification of causes of deaths requires deaths of persons under five years of age, which are merely ascribed to "bronchitis," to be classified under "acute bronchitis," and similarly certified deaths of older persons under "chronic bronchitis." This rule has been followed throughout in compiling the tables for 1907, 1908, 1909, and 1910, with the result that acute bronchitis is credited with 514 deaths in 1907, 412 deaths in 1908, 422 deaths in 1909, and 420 in 1910, viz., 236 males and 184 females.

(xxi.) *Chronic Bronchitis.* The adjustment mentioned in the preceding paragraph gives a total of 844 deaths in 1907, 818 deaths in 1908, 897 deaths in 1909, and 859 in 1910, viz., 490 males and 369 females.

(xxii.) *Pneumonia.* The 1910 figures were 986 males and 626 females, a total of 1612 deaths.

(xxiii.) *Other Diseases of the Respiratory System.* This head was established in 1910, the figures previously being included in "Other Diseases" (paragraph xxxvii.). Deaths in 1907 numbered 1689; in 1908, 1569; in 1909, 1565, and in 1910, 1544. The total for 1910 is made up as follows, viz.:—Diseases of the nasal fossæ, 12 deaths; diseases of the larynx, 90 deaths; diseases of the thyroid body, 19 deaths; broncho-pneumonia, 701 deaths, pleurisy, 168 deaths; pulmonary congestion and apoplexy, 150 deaths; gangrene of the lung, 30 deaths; asthma, 148 deaths; pulmonary emphysema, 12 deaths; fibroid phthisis, miners' complaint, 129 deaths; other diseases of the respiratory system (tuberculosis excepted), 85 deaths.

(xxiv.) *Diseases of the Stomach (Cancer excepted).* In 1910 this heading includes: Ulcer of the stomach, 48 males, 59 females; and other diseases of the stomach (cancer excepted), 104 males, 86 females; a total of 297 deaths. The corresponding figures for 1907, 1908, and 1909, were 334, 308, and 272 respectively.

(xxv.) *Diarrhœa and Enteritis (Children under two years only).* In 1907, deaths numbered 2733, viz., 1513 boys and 1220 girls; in 1908, 3236, viz., 1814 boys and 1422 girls; in 1909, 2803, viz., 1544 boys and 1259 girls; and in 1910, 3145, viz., 1713 boys and 1432 girls. The 1910 deaths were distributed amongst the six States as follows:—New South Wales, 660 males, 553 females, total 1213; Victoria, 540 males, 428 females, total 968; Queensland, 161 males, 148 females, total 309; South Australia, 132 males, 103 females, total 235; Western Australia, 116 male.. 104 females, total 220; and Tasmania, 104 males, 96 females, total 200.

The following are the death rates and percentages on total deaths due to infantile diarrhœa and enteritis in the six States for the year 1910:—

**DEATH RATES\* FROM INFANTILE DIARRHŒA AND ENTERITIS, AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1910.**

State.	Death Rate* from Infantile Diarrhœa and Enteritis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.77	0.71	0.74	7.06	8.11	7.51
Victoria ...	0.85	0.66	0.75	6.64	6.48	6.57
Queensland ...	0.50	0.55	0.52	4.48	6.88	5.39
South Australia ...	0.65	0.52	0.59	5.91	5.53	5.74
Western Australia	0.75	0.89	0.81	6.59	10.61	8.03
Tasmania ...	1.07	1.03	1.05	9.47	9.39	9.43
Commonwealth	0.76	0.68	0.72	6.55	7.37	6.89

\* Number of deaths from these diseases per 1000 of mean population.

As a large number of these deaths is directly due to improper feeding, it would be interesting to know the percentage of infants who were bottle-fed, but, unfortunately, no provision exists for the registration of this information. The number of deaths was larger than usual in 1908, particularly in Victoria, and to a lesser degree in South Australia and in Tasmania, owing to the phenomenal heat experienced in the early part of that year. The death rates for the three States named were 0.83, 0.61, and 0.71 per 1000 respectively in 1908, compared with 0.55, 0.45 and 0.48 in 1907, and with 0.75, 0.59 and 1.05 in 1910.

(xxvi.) *Appendicitis and Typhlitis.* Prior to 1910 deaths from these causes were included in Other Diseases, paragraph xxxvii. Deaths numbered 305 in 1907, 293 in 1908, 344 in 1909, and 315 in 1910, viz., 181 males and 134 females.

(xxvii.) *Hernia, Intestinal Obstructions.* The number of deaths has not varied much from year to year, the number registered in 1907 being 411; in 1908, 389; in 1909, 396; and in 1910, 398, viz., 233 males and 165 females.

(xxviii.) *Cirrhosis of the Liver.* The deaths in 1907 numbered 325; in 1908, 362; in 1909, 331; and in 1910, 368, viz., 234 males and 134 females.

(xxix.) *Nephritis and Bright's Disease.* The number of deaths attributable to these diseases from year to year is a very large one. In 1907 there were registered the deaths of 1065 males and 695 females; in 1908, those of 1140 males and 724 females; in 1909, those of 1076 males and 728 females; and in 1910, 1771, 1077 males and 694 females. Of the deaths registered in 1910, those of 82 males and 78 females

were ascribed to acute nephritis, and those of 995 males and 616 females to Bright's disease. New South Wales was responsible for 632 deaths; Victoria for 601; Queensland for 243; South Australia for 160; Western Australia for 81; and Tasmania for 54; making a total of 1771.

(xxx.) *Non-cancerous Tumours and other Diseases of the Female Genital Organs.* Deaths in 1907 numbered 128; in 1908, 159; in 1909, 130; and in 1910, 149. Included in the 149 deaths registered in 1910 were the following:—Non-puerperal uterine hæmorrhage, 3; non-cancerous uterine tumours, 35; other diseases of the uterus, 24; cysts and other ovarian tumours, 31; other diseases of the female genital organs, 56.

(xxxi.) *Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis).* Deaths in 1907 were 179; in 1908, 202; in 1909, 201; and in 1910, 218.

(xxxi.) *Other Puerperal Accidents of Pregnancy and Confinement.* The deaths in 1907 numbered 435; in 1908, 404; in 1909, 376; and in 1910, 373. Included in the 373 deaths registered in 1910 were the following:—Accidents of pregnancy, 112; puerperal hæmorrhage, 76; other accidents of childbirth, 31; puerperal albuminuria and convulsions, 77; puerperal phlegmasia alba dolens, embolus, sudden death, 29; death following childbirth, 48.

(xxxi.a) *All Puerperal Diseases.* The 591 deaths registered in 1910 under the two preceding headings will be found tabulated in "Bulletin No. 25 of Population and Vital Statistics" under various aspects. It will suffice to repeat here the following facts:—

Of the 591 mothers who died in childbirth during the year 1910, 533 were married and 58 were single. As the total number of nuptial confinements was 108,940, and of ex-nuptial confinements 6619, it follows that one in 204 of married mothers, and one in 114 of single mothers, died of puerperal disease, the general proportion being one in 196, as against one in 195 in 1909, one in 181 in 1908, and one in 178 in 1907.

The ages of the mothers who died varied from 14 to 47 years, and are shewn in the following table:—

#### AGES OF MOTHERS WHO DIED IN CHILDBIRTH, COMMONWEALTH, 1910.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women.	Total.
14 years ...	...	1	1	33 years ...	25	...	25
16 " ...	...	4	4	34 " ...	24	1	25
17 " ...	1	2	3	35 " ...	22	...	22
18 " ...	5	2	7	36 " ...	27	...	27
19 " ...	5	5	10	37 " ...	21	...	21
20 " ...	2	4	6	38 " ...	28	1	29
21 " ...	13	9	22	39 " ...	21	...	21
22 " ...	13	4	17	40 " ...	17	1	18
23 " ...	25	4	29	41 " ...	9	...	9
24 " ...	31	1	32	42 " ...	17	1	18
25 " ...	20	3	23	43 " ...	8	...	8
26 " ...	28	4	32	44 " ...	6	...	6
27 " ...	21	1	22	45 " ...	1	...	1
28 " ...	32	3	35	46 " ...	2	...	2
29 " ...	27	2	29	47 " ...	2	...	2
30 " ...	27	2	29	Not stated	1	...	1
31 " ...	24	2	26				
32 " ...	28	1	29	Total deaths	533	58	591

Of the 533 married women shewn in the above table, 28 died in Tasmania; in regard to these no information is available as to previous issue and as to duration of marriage.

Of the remaining 505 women, 160 died at their first confinement, 80 at their second, 54 at their third, 53 at their fourth, 49 at their fifth, 29 at their sixth, 28 at their seventh, 17 at their eighth, 11 at their ninth, 9 at their tenth, 9 at their eleventh, 3 at their twelfth, 1 at her thirteenth, 1 at her fourteenth, and 1 at her fifteenth confinement. The total number of children of the 505 mothers was 1618.

Twenty-four of the mothers who died had been married less than one year, 79 between one and two years, 41 between two and three years, the duration of marriage ranging up to 27 years. This tabulation will be found in detail, and distinguishing the ages at marriage, in "Bulletin No. 25 of Population and Vital Statistics," as will a further tabulation shewing the duration of marriage and previous issue in combination. These tables shew, for instance, that one mother, who had been married at the age of 23 years, died at the age of 45, in the 22nd year of her marriage, at her fourteenth confinement. The mother who died at her fifteenth confinement had been married for 21 years, and was at the time of her death 40 years old.

(xxxiii.) *Congenital Debility and Malformations.* The figures for 1910 include children under one year of age, of whom 2772 were under three months. The 1910 figures include:—Malformations, 220 males, 149 females, total 369; and congenital debility, icterus, and sclerema of children under one year of age, 1629 males and 1223 females, total 2852; or a grand total of 3221. Of these deaths, 1215 were registered in New South Wales, viz., 713 males and 502 females; 918 in Victoria, viz., 524 males and 394 females; 371 in Queensland, viz., 201 males and 170 females; 289 in South Australia, viz., 169 males and 120 females; 210 in Western Australia, viz., 121 males and 89 females; and 218 in Tasmania, viz., 121 males and 97 females.

(xxxiv.) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are slightly in excess of those due to infantile debility. In 1907 they numbered 3136, viz., 1721 males and 1415 females; in 1908, 3466, viz., 2027 males and 1439 females; in 1909, 3194, viz., 1829 males and 1365 females; and in 1910, 3353, viz., 1905 males and 1448 females. Of the deaths registered in 1910, 1094 occurred in New South Wales, viz., 666 males and 428 females; 1283 in Victoria, viz., 694 males and 589 females; 298 in Queensland, viz., 188 males and 110 females; 336 in South Australia, viz., 156 males and 180 females; 121 in Western Australia, viz., 86 males and 35 females; and 221 in Tasmania, viz., 115 males and 106 females.

Of the males whose death was described as due to senility, 1 was aged between 40 and 44; 3 were between 50 and 54; 9 were between 55 and 59; 34 between 60 and 64; 105 between 65 and 69; 320 between 70 and 74; 472 between 75 and 79; 490 between 80 and 84; 302 between 85 and 89; 121 between 90 and 94; 35 between 95 and 99; while 12 were 100 years old and upwards; and of one the age was not stated.

Of the females, 2 were between 50 and 54; 2 between 55 and 59; 23 between 60 and 64; 70 between 65 and 69; 209 between 70 and 74; 331 between 75 and 79; 384 between 80 and 84; 256 between 85 and 89; 129 between 90 and 94; 33 between 95 and 99; while 9 were 100 years old and upwards.

(xxxv.) *Violence.* A very large number of deaths is every year due to external violence, and, as might be expected from the fact that their occupations expose them much more to accidents, males largely predominate. The figures quoted are exclusive of suicides, which have been treated as a separate group. Deaths ascribed to violence numbered in 1907, 2679, viz., 2033 males and 641 females; in 1908, 2922, viz., 2187 males and 735 females; in 1909, 2664, viz., 2050 males and 614 females; and in 1910, 2738, viz., 2128 males and 610 females. Of the deaths registered in 1910, those of 761 males and 208 females occurred in New South Wales; those of 506 males and 201 females in Victoria; those of 404 males and 80 females in Queensland; those of 201

males and 49 females in South Australia; those of 187 males and 51 females in Western Australia; and those of 69 males and 21 females in Tasmania.

The following table shews the various kinds of accidental deaths which occurred in 1910, distinguishing males and females:—

### DEATHS FROM VIOLENCE, COMMONWEALTH, 1910.

Cause of Death.	Males.	Females.	Total.
Poisoning by food ... ..	13	19	32
Venomous bites and stings ... ..	8	4	12
Other acute poisonings ... ..	28	24	52
Conflagration ... ..	6	4	10
Burns (conflagration excepted) ... ..	106	183	289
Absorption of deleterious gases ... ..	12	9	21
Accidental drowning ... ..	470	77	547
Traumatism by firearms ... ..	70	13	83
Traumatism by cutting or piercing instruments ... ..	5	...	5
Traumatism by fall ... ..	341	74	415
Traumatism in mines or quarries ... ..	128	...	128
Traumatism by machines ... ..	29	...	29
Traumatism by other crushing (vehicles, railways, etc.) ... ..	303	46	349
Injuries by animals ... ..	52	6	58
Starvation, thirst, fatigue ... ..	26	5	31
Excessive cold ... ..	4	...	4
Effects of heat ... ..	77	32	109
Lightning ... ..	5	...	5
Electricity (lightning excepted) ... ..	6	...	6
Homicide by firearms ... ..	12	10	22
Homicide by cutting or piercing instruments... ..	2	5	7
Homicide by other means ... ..	43	24	67
Fractures (cause not specified) ... ..	84	20	104
Other external violence ... ..	298	55	353
Total Deaths ... ..	2,128	610	2,738

In every kind of accidental death there was, therefore, a large excess of males, with the exception of burning accidents, in which female deaths largely predominated, poisoning by food, and homicide by cutting or piercing instruments.

The excessive heat of January, 1908, was responsible for an increase in the number of deaths caused by insolation, i.e., sunstroke and heat apoplexy, from 64 in 1907 to 246 in 1908, distributed as follows:—New South Wales, 46; Victoria, 130; Queensland, 14; South Australia, 39; Western Australia, 15; Tasmania, 2. In 1910, as the preceding table shews, the deaths fell to 109.

(xxxvi.) *Suicide*.\* Although their number in 1908, 1909, and 1910 was greater than it was in 1907, it may be said that suicides have shewn a tendency to decrease during recent years, the number in 1905 having been 520, viz., 431 males and 89 females; while in 1906 it was 499, viz., 403 males and 96 females; in 1907, 461, viz., 385 males and 76 females; in 1908, 497, viz., 413 males and 84 females; in 1909, 495, viz., 398 males and 97 females; and in 1910, 516, viz., 432 males and 84 females. Of the last named, those of 132 males and 24 females happened in New South Wales; those of 100 males and 30 females in Victoria; those of 100 males and 14 females in Queensland; those of 27 males and 6 females in South Australia; those of 63 males and 7 females in Western Australia; and those of 10 males and 3 females in Tasmania.

The modes adopted by persons who committed suicide in the years 1907 to 1910 were as follows:—

\* See also Appendix to this section, page 240.

## NUMBER OF MALE AND FEMALE SUICIDES, COMMONWEALTH, 1907 to 1910.

	Males.				Females.				Total.			
	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
Population in millions	2.14	2.18	2.22	2.27	1.98	2.01	2.05	2.10	4.12	4.19	4.27	4.37
Mode of Death.												
Poisoning ...	57	88	70	79	32	35	54	34	89	123	124	113
Asphyxia ...	2	1	2	...	...	...	...	...	2	1	2	...
Hanging or Strangulation ...	71	68	67	72	12	15	9	10	83	83	76	82
Drowning ...	37	31	24	42	19	14	19	19	56	45	43	61
Firearms ...	129	146	138	134	3	7	6	6	132	153	144	140
Cutting instruments ...	61	54	74	79	5	6	5	13	66	60	79	92
Precipitation from a height ...	6	4	7	3	1	2	...	...	7	6	7	3
Crushing ...	3	6	5	8	2	2	1	...	5	8	6	8
Other modes ...	19	15	11	15	2	3	3	2	21	18	14	17
Total ...	385	413	398	432	76	84	97	84	461	497	495	516

The death rates from suicides and the percentage on total deaths borne by suicides are shown in the following table :—

DEATH RATES\* FROM SUICIDES AND PERCENTAGE ON TOTAL DEATHS, 1910.  
COMMONWEALTH.

State.	Death Rates* from Suicides.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.15	0.03	0.09	1.41	0.35	0.97
Victoria ...	0.16	0.05	0.10	1.23	0.45	0.88
Queensland ...	0.31	0.05	0.19	2.78	0.65	1.98
South Australia ...	0.13	0.03	0.08	1.21	0.32	0.81
Western Australia	0.41	0.06	0.26	3.58	0.71	2.55
Tasmania ...	0.10	0.03	0.07	0.91	0.29	0.61
Commonwealth	0.19	0.04	0.12	1.65	0.43	1.13

\* Number of deaths from suicide per 1000 of mean population.

From the following table, which shews the ages of the persons who committed suicide in 1910, it will be seen that both extreme youth and extreme old age are represented :—

## AGES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1910.

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
10 years and under 15	1	3	4	60 years and under 65	37	2	39
15 " " 20	6	8	14	65 " " 70	17	2	19
20 " " 25	24	10	34	70 " " 75	9	2	11
25 " " 30	34	10	44	75 " " 80	5	...	5
30 " " 35	41	7	48	80 " " 85	4	...	4
35 " " 40	45	8	53	85 " " 90	3	...	3
40 " " 45	59	4	63	Age not stated	...	3	3
45 " " 50	57	9	66				
50 " " 55	49	14	63				
55 " " 60	38	5	43	Total Deaths ...	432	84	516



The birthplaces of persons who committed suicide are shewn in the following table:—  
**BIRTHPLACES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1910.**

Birthplaces.	M.	F.	Total.	Birthplaces.	M.	F.	Total.
New South Wales ...	60	15	75	Sweden ...	3	...	3
Victoria ...	88	25	113	Wales ...	5	...	5
Queensland ...	20	7	27	Canada ...	1	...	1
South Australia ...	12	7	19	United States ...	3	...	3
Tasmania ...	8	2	10	China ...	13	...	13
New Zealand ...	4	3	7	Dutch East Indies ...	1	...	1
Denmark ...	2	...	2	India ...	4	...	4
England ...	86	11	97	Japan ...	2	...	2
Germany ...	11	...	11	Philippine Islands ...	1	...	1
Ireland ...	34	5	39	Fiji ...	...	...	...
Italy ...	4	1	5	Birthplace not stated	49	2	51
Norway ...	2	...	2				
Scotland ...	15	5	20				
Austria-Hungary ...	2	...	2				
France ...	2	1	3				
				Total Deaths ...	432	84	516

The following table shews the occupations of the 432 males who committed suicide:—

**OCCUPATIONS OF MALE PERSONS WHO COMMITTED SUICIDE, 1910.**  
COMMONWEALTH.

Occupations.	Deaths.	Occupations.	Deaths.
Professional class ...	17	Pastoral class ...	22
Domestic class ...	31	Working in mines and quarries ...	33
Mercantile class ...	63	Other primary producers ...	9
Engaged in transport and communication ...	29	Independent means ...	6
Manufacturing class ...	39	Dependents ...	3
Engaged in building and construction ...	18	Occupation not stated ...	14
Indefinite industrial workers ...	106		
Agricultural class ...	42	Total Deaths ...	432

The assertion has been made that suicide has become more frequent during recent years, but an examination of the figures from the year 1871 onwards hardly bears this out. The absolute figures have certainly increased, but proportionately to the population the figures for 1906-10 are practically the same as those for 1886-90. No particulars are available for Western Australia prior to 1886, and from 1886 to 1895 the sexes are not distinguished. All figures for the first five periods are, therefore, exclusive of Western Australia:—

**SUICIDES, COMMONWEALTH, 1871-75 to 1906-10.**

Period.	Number of Suicides.			Suicides per One Million.			Suicides of Females to 100 Suicides of Males. Based on	
	Males.	Females.	Total.	Males.	Females.	Total.	Absolute Figures.	Rates.
1871-75	715	150	865	150.94	37.56	99.07	20.93	24.88
1876-80	878	145	1,023	159.69	31.06	100.62	16.51	19.45
1881-85	999	183	1,182	152.58	32.90	97.61	18.32	21.56
1886-90	1,894	292	<sup>1</sup> 1,686	179.20	43.97	<sup>3</sup> 116.92	20.95	24.51
1891-95	1,574	337	<sup>2</sup> 1,911	181.34	44.09	<sup>4</sup> 117.07	21.41	24.31
1896-1900	1,838	410	2,248	191.11	47.88	123.65	22.31	25.05
1901-05	2,054	380	2,434	201.78	40.88	124.98	18.50	20.26
1906-10	2,031	437	2,468	186.11	43.22	117.39	21.51	23.22

1. 1705 inclusive of Western Australian figures. 2. 1984 inclusive of Western Australian figures.  
3. 116.49 inclusive of Western Australian figures. 4. 119.11 inclusive of Western Australian figures.

(xxxvii.) *Other Diseases.* The number of causes included under this heading is a very large one, amounting to no less than 79 of the items shewn in the detailed classification, and deaths were recorded under every one of these with the exception of the following six:—Glanders and farcy, rabies, pellagra, diseases of the eyes, and non-venereal diseases of the male genital organs. The total number of deaths under "other diseases" in 1907 was 6677, viz., 3933 males and 2744 females; in 1908, 7417, viz., 4351 males and 3066 females; in 1909, 7419, viz., 4344 males and 3075 females; and in 1910, 7794, viz., 4590 males and 3204 females. Following the revised edition of the classification the following changes have been made in this heading during 1910: beri-beri (60 deaths) is now included under this heading instead of under xii., "Other Epidemic Diseases." Other diseases of the respiratory system (1544 deaths) are now shewn under a new head (xxiii.), and appendicitis and typhlitis (315 deaths) under head xxvi. Some of the diseases included here account for very considerable numbers of deaths. Thus there were 846 deaths ascribed to diarrhoea and enteritis of children over two years of age and of adults, 485 to convulsions of children under five years of age; 420 to diabetes; 374 to paralysis without indicated cause; and 491 to diseases of the arteries, atheroma, and aneurism. Particulars of the deaths included in 1910 are shewn in the following table:—

**CAUSES OF DEATH INCLUDED UNDER "OTHER DISEASES," COMMONWEALTH, 1910.**

Causes.	M.	F.	T'tal.	Causes.	M.	F.	T'tal.
Purulent Infection and Septicæmia ... ..	59	61	120	Diseases of the Lymphatic System ... ..	2	2	4
Anthrax ... ..	3	1	4	Hæmorrhages, Other Diseases of Circulatory System ...	26	24	50
Tetanus ... ..	74	28	102	Diseases of the Mouth and its Associated Organs ... ..	9	11	20
Mycosis ... ..	2	1	3	Diseases of the Pharynx ...	30	11	41
Beri beri ... ..	59	1	60	Diseases of the Oesophagus ...	13	4	17
Rickets ... ..	3	4	7	Diarrhoea and Enteritis of Children over two years of age and Adults ...	427	419	846
Syphilis ... ..	87	66	153	Ankylostomiasis ... ..	2	3	5
Gonococcus Infection ...	2	...	2	Intestinal Parasites ... ..	1	...	1
Other Tumours (Tumours of the female genital organs excepted) ... ..	34	33	67	Other Diseases of the Intestine	33	28	61
Acute Articular Rheumatism	66	70	136	Acute Yellow Atrophy of the Liver ... ..	1	5	6
Chronic Rheumatism & Gout	51	69	120	Hydatid Tumours of the Liver	24	25	49
Scurvy ... ..	7	3	10	Biliary Calculi ... ..	34	58	92
Diabetes ... ..	185	235	420	Other Diseases of the Liver ...	102	99	201
Exophthalmic Goitre ...	5	48	53	Diseases of the Spleen ...	2	2	4
Addison's Disease ...	16	13	29	Simple Peritonitis (non-puerperal) ... ..	90	98	188
Leucæmia ... ..	42	26	68	Other Diseases of the Digestive System ... ..	15	9	24
Anæmia, Chlorosis ... ..	117	126	243	Chyluria ... ..	...	1	1
Other General Diseases ...	14	12	26	Other Diseases of the Kidneys and their Adnexa ...	70	25	95
Acute and Chronic Alcoholism	144	29	173	Calculi of Urinary Passages ...	22	8	30
Chronic Lead Poisoning ...	14	1	15	Diseases of the Bladder ...	174	30	204
Other Chronic Poisonings due to occupations ... ..	1	...	1	Other Diseases of the Urethra, Urinary Abscess, etc. ...	31	...	31
Other Chronic Poisonings ...	11	4	15	Diseases of the Prostate ...	152	...	152
Encephalitis ... ..	24	15	39	Non-puerperal Diseases of the Breast (cancer excepted) ...	...	1	1
Progressive Locomotor Ataxia	42	6	48	Gangrene ... ..	61	41	102
Other Diseases of the Spinal Cord ... ..	146	78	224	Furuncle ... ..	10	8	18
Paralysis without indicated cause ... ..	925	149	374	Acute Abscess ... ..	16	12	28
General Paralysis ... ..	134	28	162	Other Diseases of the Skin and Adnexa ... ..	62	59	121
Other Forms of Mental Alienation ... ..	20	34	54	Non-tubercular Diseases of the Bones ... ..	23	20	43
Epilepsy ... ..	80	62	142	Other Diseases of the Joints (Tuberculosis & Rheumatism excepted) ... ..	15	8	23
Convulsions (non-puerperal) ...	14	26	40	Amputation ... ..	...	1	1
Convulsions of Children under five years of age ... ..	277	208	485	Other Diseases of the Organs of Locomotion ... ..	1	...	1
Chorea ... ..	1	6	7	Other Diseases peculiar to Infancy ... ..	277	207	484
Neuralgia and Neuritis ...	10	16	26	Want of Care (Infants) ...	15	7	22
Other Diseases of the Nervous System ... ..	159	98	257				
Diseases of the Ear ... ..	5	5	10				
Pericarditis ... ..	16	14	30				
Acute Endocarditis ... ..	115	90	205				
Angina Pectoris ... ..	65	27	92				
Diseases of the Arteries, Atheroma, Aneurism ... ..	368	123	491				
Embolism and Thrombosis ...	145	152	297				
Diseases of the Veins (Varices, Varicose Ulcers, Hæmorrhoids) ... ..	8	11	19				
				Total Deaths ... ..	4,590	3,205	7,795

(xxxviii.) *Unspecified or Ill-defined Diseases.* The number of cases which has to be included here is a considerable one from year to year, having numbered 1275 in 1907, 1262 in 1908, 1087 in 1909, and 598, viz., 376 males and 222 females, in 1910. The detailed classification distinguishes these ill-defined diseases under three headings:—Dropsy, including such definitions as anasarca, ascites, general oedema, etc.; sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthenia, coma, dentition, exhaustion, heart failure, etc. In 1910 the number of cases of death which would have to be classed under the first of these categories was 17; those belonging to the second, 39; and those belonging to the third, 542. It is, of course, true that there must always occur some cases where the disease is not well characterised, or where sufficient information is not procurable to allow of a clear definition being given in the certificate of death, but in the majority of cases included under this heading a more complete diagnosis and consequently a more satisfactory certificate would no doubt have been possible.

**18. Causes of Death in Classes.**—The figures presented in the preceding paragraphs relate to certain definite causes of death. It is almost generally acknowledged that figures of this kind are of greater value in medical statistics than is a classification under general headings. The classification under fourteen general headings adopted by the compiler of *The International Nomenclature* is, however, shewn in the following table, together with the death rates and percentages on total deaths pertaining to those classes:

### DEATHS, DEATH RATES\*, AND PERCENTAGES ON TOTAL DEATHS IN CLASSES, 1910.

#### COMMONWEALTH.

Class.	Total Deaths.			Death Rate.*			Percentage on Total Deaths.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1. General diseases ...	6,079	4,999	11,078	2.68	2.38	2.53	23.24	25.70	24.30
2. Diseases of the Nervous System & of the Organs of Special Sense...	2,331	1,808	4,139	1.03	0.86	0.95	8.91	9.31	9.08
3. Diseases of the Circulatory System	3,114	2,452	5,566	1.37	1.17	1.27	11.91	12.62	12.21
4. Diseases of the Respiratory System	2,638	1,797	4,435	1.16	0.85	1.01	10.09	9.25	9.73
5. Diseases of the Digestive Organs...	3,296	2,782	6,078	1.45	1.32	1.39	12.60	14.32	13.33
6. Diseases of the Genito-Urinary System and Adnexa ...	1,526	908	2,434	0.67	0.43	0.56	5.83	4.68	5.31
7. Puerperal Condition ...	...	591	591	...	0.28	0.14	...	3.04	1.30
8. Diseases of the Skin and of the Cellular Tissue...	149	120	269	0.07	0.06	0.06	0.57	0.62	0.59
9. Diseases of the Organs of Locomotion ...	39	29	68	0.02	0.01	0.02	0.15	0.15	0.15
10. Malformations ...	220	149	369	0.10	0.07	0.08	0.84	0.77	0.81
11. Infancy ...	1,921	1,437	3,358	0.85	0.68	0.77	7.34	7.39	7.36
12. Old Age ...	1,905	1,448	3,353	0.84	0.69	0.77	7.29	7.45	7.35
13. Violence ...	2,560	694	3,254	1.13	0.33	0.74	9.79	3.57	7.14
14. Ill-defined Diseases ...	376	222	598	0.17	0.11	0.14	1.44	1.13	1.31
Total ...	26,154	19,436	45,590	11.54	9.24	10.43	100.00	100.00	100.00

\* Number of deaths per 1000 of mean population.

**19. Deaths of Children under 1 Year.**—“Bulletin No. 25 of Population and Vital Statistics” contains tables for the first time for the year 1910 shewing the age at death of children dying during the first year of life from nineteen causes. In the Bulletin mentioned the particulars are published for the States and Commonwealth, but the totals for the Commonwealth only are here shewn.

The figures for death from lack of care and other diseases peculiar to early infancy include children under four months of age only.

## DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1910.

## (a) MALES.

Age at Death.			Whooping Cough.	Pulmonary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Tuberculosis of other Organs.	Disseminated Tuberculosis.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week	...	...	1	...	...	...	...	...	4	3	72	12
1 week and under 2	...	...	...	...	...	...	...	...	3	3	32	6
2 weeks	...	3	4	...	...	...	...	...	...	1	13	3
3 "	...	4	5	...	...	...	...	...	5	1	10	15
1 month	...	2	27	1	...	2	1	...	9	7	17	40
2 months	...	3	27	...	1	1	1	...	17	9	13	17
3 "	...	4	27	1	...	3	...	2	6	12	18	11
4 "	...	5	14	...	3	...	...	...	3	8	9	15
5 "	...	6	10	...	3	1	...	...	5	9	6	6
6 "	...	7	9	1	2	1	...	...	3	7	12	5
7 "	...	8	11	2	2	1	...	...	1	5	7	4
8 "	...	9	4	...	3	1	1	...	1	12	7	2
9 "	...	10	5	...	...	...	...	1	...	7	6	6
10 "	...	11	6	...	4	...	...	...	...	8	6	7
11 "	...	12	6	...	3	3	1	...	1	6	3	3
Total under 1 year			156	5	21	13	4	3	58	98	231	142

Age at Death.			Broncho-Pneumonia.	Pneumonia.	Diarrhea and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other External Violence.
Under 1 week	...	...	6	5	13	3	90	939	227	10	12
1 week and under 2	...	...	4	3	22	1	31	134	26	...	3
2 weeks	...	3	2	5	21	...	15	82	9	...	1
3 "	...	4	4	4	32	...	5	59	7	...	2
1 month	...	2	25	14	122	2	21	144	6	3	6
2 months	...	3	18	9	150	3	12	72	2	1	4
3 "	...	4	8	11	179	5	9	52	...	1	2
4 "	...	5	11	15	143	5	3	36	...	...	1
5 "	...	6	9	6	135	8	3	31	...	...	2
6 "	...	7	16	8	123	6	5	28	...	...	1
7 "	...	8	8	7	118	4	2	22	...	...	...
8 "	...	9	13	7	87	3	3	9	...	...	1
9 "	...	10	6	8	109	3	2	7	...	...	1
10 "	...	11	10	7	77	...	1	7	...	...	...
11 "	...	12	5	3	78	4	2	7	...	...	1
Total under 1 year			145	112	1,409	47	204	1,629	277	15	37

## DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1910.

## (b) FEMALES

Age at Death.			Whooping Cough.	Pulmonary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Tuberculosis of other Organs.	Disseminated Tuberculosis.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week	...	...	...	...	...	...	...	...	...	3	43	1
1 week and under 2	...	...	...	...	...	...	...	...	...	1	20	6
2 weeks	3	...	3	...	...	...	...	...	5	4	8	8
3 "	4	...	5	...	...	...	...	...	3	3	5	5
1 month	2	...	25	1	...	1	...	...	10	2	13	22
2 months	3	...	29	...	1	1	...	...	3	5	5	16
3 "	4	...	14	...	1	1	...	1	9	4	10	8
4 "	5	...	10	1	2	1	...	...	3	7	6	14
5 "	6	...	7	2	2	1	...	...	3	4	4	4
6 "	7	...	14	...	3	2	...	...	4	8	7	1
7 "	8	...	13	1	3	...	...	...	...	2	3	4
8 "	9	...	11	1	2	3	...	...	1	9	8	8
9 "	10	...	4	1	...	2	...	...	3	9	7	2
10 "	11	...	7	...	2	2	...	...	1	5	5	4
11 "	12	...	7	...	6	...	...	...	1	10	3	2
Total under 1 year	...	...	149	7	22	14	...	1	46	76	147	105

Age at Death.			Broncho-Pneumonia.	Pneumonia.	Diarrhoea and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other External Violence.
Under 1 week	...	...	3	1	4	...	57	695	166	5	1
1 week and under 2	...	...	4	3	17	3	10	112	26	...	1
2 weeks	3	...	6	6	17	...	15	58	5	...	...
3 "	4	...	5	3	23	1	7	49	3	...	2
1 month	2	...	26	6	99	1	14	90	6	...	2
2 months	3	...	11	5	134	1	5	56	1	1	3
3 "	4	...	9	5	150	3	3	43	...	1	3
4 "	5	...	9	4	148	3	8	32	...	...	1
5 "	6	...	5	8	122	3	8	25	...	...	1
6 "	7	...	9	7	100	2	7	14	...	...	...
7 "	8	...	9	7	74	5	3	19	...	...	1
8 "	9	...	11	5	94	2	...	12	...	...	2
9 "	10	...	10	5	88	3	3	7	...	...	1
10 "	11	...	8	12	59	2	1	6	...	...	...
11 "	12	...	7	5	54	...	2	5	...	...	...
Total under 1 year	...	...	132	82	1,183	29	143	1,223	207	7	18

## DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1910.

## (c) MALES AND FEMALES.

Age at Death.			Whooping Cough.	Pulmonary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Tuberculosis of other Organs.	Disseminated Tuberculosis.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week	...	...	1	...	...	...	...	...	4	6	115	3
1 week and under 2	...	...	...	...	...	...	...	...	3	4	52	12
2 weeks	...	...	7	...	...	...	...	...	5	5	21	11
3 "	...	...	10	...	...	...	...	...	8	4	15	20
1 month	...	...	52	2	...	3	1	...	19	9	30	62
2 months	...	...	56	...	2	2	1	...	20	14	18	33
3 "	...	...	41	1	1	4	...	3	15	16	23	19
4 "	...	...	24	1	5	1	...	...	6	15	15	29
5 "	...	...	17	2	5	2	...	...	8	13	10	10
6 "	...	...	23	1	5	3	...	...	7	15	19	6
7 "	...	...	24	3	5	1	...	...	1	7	10	8
8 "	...	...	15	1	5	4	1	...	2	21	15	10
9 "	...	...	9	1	...	2	...	1	3	16	13	8
10 "	...	...	13	...	6	2	...	...	1	13	11	11
11 "	...	...	13	...	9	3	1	...	2	16	6	5
Total under 1 year			305	12	43	27	4	4	104	174	378	247

Age at Death.			Broncho-Pneumonia.	Pneumonia.	Diarrhea and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility.	Other Diseases Peculiar to Early Infancy.	Lack of Care.	Other External Violence.
Under 1 week	...	...	9	6	17	3	147	1,634	393	15	13
1 week and under 2	...	...	8	6	39	4	41	246	52	...	4
2 weeks	...	...	8	11	38	...	30	140	14	...	1
3 "	...	...	9	7	55	1	12	108	10	...	4
1 month	...	...	51	20	221	3	35	234	12	3	8
2 months	...	...	29	14	284	4	17	128	3	2	7
3 "	...	...	17	16	329	8	12	95	...	2	5
4 "	...	...	20	19	291	8	11	68	...	...	2
5 "	...	...	14	14	257	11	11	56	...	...	3
6 "	...	...	25	15	223	8	12	42	...	...	1
7 "	...	...	17	14	192	9	5	41	...	...	1
8 "	...	...	24	12	181	5	3	21	...	...	3
9 "	...	...	16	13	197	6	5	14	...	...	2
10 "	...	...	18	19	136	2	2	13	...	...	...
11 "	...	...	12	8	132	4	4	12	...	...	1
Total under 1 year			277	194	2,592	76	347	2,852	484	22	55

It will be seen that the maximum number of deaths from convulsions, pneumonia, malformations, congenital debility, icterus and sclerema, other diseases peculiar to early infancy, and lack of care, occurred during the first month of life, while acute bronchitis

and broncho-pneumonia were most fatal during the second month. Diarrhoea and enteritis carried off more children in the fourth month than in any other, the numbers gradually decreasing toward the end of the year. Whooping cough and syphilis reached their maxima during the third month of life.

20. **Age at Death of Married Males and Females, and Issue.**—"Bulletin No. 25 of Population and Vital Statistics" contains a number of tables, for the Commonwealth, exclusive of Tasmania, shewing the age at marriage, age at death, duration of life after marriage, birthplaces, and occupations, in combination with the issue, of married persons who died in 1910. A short summary of the tables mentioned is given hereunder. Deaths of married males in 1910 numbered 10,771, and of married females, 10,159. The ages at death of the males ranged from 18 to 109 years, and those of the females, from 17 to 105 years. The total number of children in the families of the 10,771 males was 58,817, the maximum in one family being 23; and of the 10,159 females, 54,188, with a maximum of 22. The average number of children is shewn for various age-groups in the following table:—

### AGE AT DEATH OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

Age at Death.	Average Family of Males.	Average Family of Females.	Age at Death.	Average Family of Males.	Average Family of Females.
Under 20 years ...	0.50	0.78	70 to 74 years ...	6.50	6.55
20 to 24 years ...	1.06	1.12	75 " 79 " ...	6.75	6.69
25 " 29 " ...	1.53	1.74	80 " 84 " ...	6.54	6.01
30 " 34 " ...	2.02	2.64	85 " 89 " ...	6.58	5.66
35 " 39 " ...	2.72	3.72	90 " 94 " ...	6.67	5.66
40 " 44 " ...	3.65	4.31	95 " 99 " ...	6.66	4.74
45 " 49 " ...	4.30	4.75	100 years and upwards	5.22	6.00
50 " 54 " ...	4.89	5.37	Age not stated ...	6.20	2.62
55 " 59 " ...	5.45	5.81			
60 " 64 " ...	5.62	6.00			
65 " 69 " ...	6.33	6.42	All ages ...	5.46	5.33

The figures shewn in the preceding table include the issue both living and dead; the proportion between the two, taking deceased males and females together, was about as 1000 to 326, or, roughly speaking, as three to one. The totals are shewn in the following table:—

### ISSUE OF MARRIED MALES AND FEMALES.

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

Issue of Married Males.	Males.	Females.	Total.	Issue of Married Females.	Males.	Females.	Total.
Living ...	23,127	22,427	45,554	Living ...	20,135	19,595	39,730
Dead ...	7,173	6,090	13,263	Dead ...	7,539	6,919	14,458
Total ...	30,300	28,517	58,817	Total ...	27,674	26,514	54,188

These figures shew a masculinity in the births of 105.35, which agrees fairly well with the experience of the birth statistics, the masculinity of the births in the Commonwealth from 1901 to 1910 having ranged from 104.11 to 106.39.

As a matter of curiosity it may be mentioned that the family of twenty-three belonged to a father who died at the age of 82, and that it had originally comprised twelve sons and eleven daughters, of whom nine sons and eight daughters survived their father.

**21. Age at Marriage of Males and Females, and Issue.**—While the table giving the average families of married males and females naturally shows an increase in the averages with advancing ages at death, the following table, which gives the average families of males and females according to the age at marriage of the deceased parents, shews a corresponding decrease in the averages as the age at marriage advances:—

#### AGE AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE.

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

Age at Marriage.	Average Family of Males.	Average Family of Females.	Age at Marriage.	Average Family of Males.	Average Family of Females.
Under 20 years ...	6.91	7.13	55 to 59 years ...	2.49	...
20 to 24 years ...	6.43	5.75	60 „ 64 „ ...	1.86	...
25 „ 29 „ ...	5.69	4.35	65 years and upwards ...	0.76	...
30 „ 34 „ ...	4.99	3.01	Age not stated ...	4.64	4.79
35 „ 39 „ ...	4.31	1.85			
40 „ 44 „ ...	3.46	0.68			
45 „ 49 „ ...	3.25	0.22			
50 „ 54 „ ...	1.70	...	All ages ...	5.46	5.33

It will be seen that of women who were married at ages from 40 to 44 years, seven in every ten gave birth to a child, while in the case of women who were married at ages from 45 to 49 years, the proportion fell to about one in every five.

**22. Duration of Life after Marriage of Males and Females.**—The duration of life after marriage has been tabulated for males and females both in combination with the age at marriage, and with the total and average issue. The tables shewing the result do not, however, lend themselves to condensation, and are, therefore, omitted here. They will be found in “Bulletin No. 25 of Population and Vital Statistics,” pages 142 to 147.

**23. Birthplaces of Married Males and Females, and Issue.**—The following table shews the birthplaces of married males and females whose deaths were registered in 1910, together with their average issue. No generalisations can, of course, be made in those cases where the number of deaths is small, and where the average family had to be worked out on small figures. But where the figures are comparatively large, as in the case of natives of the Commonwealth, differences occur between the averages of the individual States which appear inexplicable on any other ground than that of inefficient registration in some of the States. It will be noted that the differences occur both in the male and female averages. Although the figures apply to the Commonwealth as a whole, with the exception of Tasmania, it must be borne in mind that the vast majority of deaths of natives of any one State are registered in that particular State. For the whole Commonwealth the average family of deceased males was 4.81, and of deceased females, 4.55.



**BIRTHPLACES OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.**  
COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

Birthplaces.	Married Males.		Married Females.		Birthplaces.	Married Males.		Married Females.	
	Deaths.	Average Family.	Deaths.	Average Family.		Deaths.	Average Family.	Deaths.	Average Family.
New South Wales	1,427	5.32	1,674	5.30	United States	63	4.08	19	4.79
Victoria	1,140	4.11	1,343	3.83	West Indies	10	2.40	5	5.80
Queensland	152	3.80	250	3.30	Brazil	1	...	2	4.50
South Australia	457	4.86	531	4.46	Chili	1	3.00	1	4.00
Western Australia	55	4.74	74	4.81	Mexico	1	1.00	...	...
Tasmania	127	6.30	135	4.93	Sth. America (so descd.)	1	...	1	7.00
New Zealand	50	3.30	49	3.33	Afghanistan	1	3.00	...	...
Austria-Hungary	12	3.83	3	3.33	Ceylon	3	2.66	...	...
Belgium	3	4.00	1	...	China	37	3.10	...	...
Channel Islands	7	4.57	13	6.54	Dutch East Indies	2	3.50	1	8.00
Denmark	52	4.63	18	4.67	India	25	4.20	20	4.55
England	3,686	5.85	2,660	5.91	Japan	5	1.00	...	...
Finland	8	3.75	1	6.00	Philippine Islands	2	0.50	...	...
France	31	4.51	11	3.82	Straits Settlements	...	...	1	8.00
Germany	410	5.97	249	6.47	Syria	7	3.28	6	4.33
Gibraltar	...	...	1	6.00	Azores	1	7.00	...	...
Greece	5	4.60	1	...	Canary Islands	...	...	1	2.00
Ireland	1,591	6.12	1,996	5.88	Cape Colony	3	3.66	5	5.80
Isle of Man	7	1.71	4	5.00	Mauritius	8	5.12	3	9.67
Italy	38	4.92	8	6.87	Reunion	1	6.00	1	10.00
Malta	4	4.00	1	4.00	South Africa (so descd.)	8	2.75	8	5.75
Netherlands	8	4.87	1	7.00	St. Helena	...	...	2	8.50
Norway	21	4.81	4	6.00	Fiji	1	10.00	2	5.50
Portugal	4	5.00	2	4.50	New Caledonia	2	3.50	...	...
Russia	19	5.63	10	7.00	New Guinea	...	...	1	4.00
Scotland	978	5.74	862	5.78	New Hebrides	2	0.50	1	1.00
Spain	4	6.75	2	5.00	S. Sea Islands (so descd.)	7	2.28	1	5.00
Sweden	48	4.71	4	5.00	At Sea	34	6.17	31	4.81
Switzerland	33	5.06	4	5.75	Not stated	48	3.85	57	4.81
Turkey	...	...	1	...					
Wales	90	5.40	67	5.34					
Canada	28	3.96	8	6.25					
Newfoundland	2	3.00	1	13.00	Total	10,771	5.46	10,159	5.33

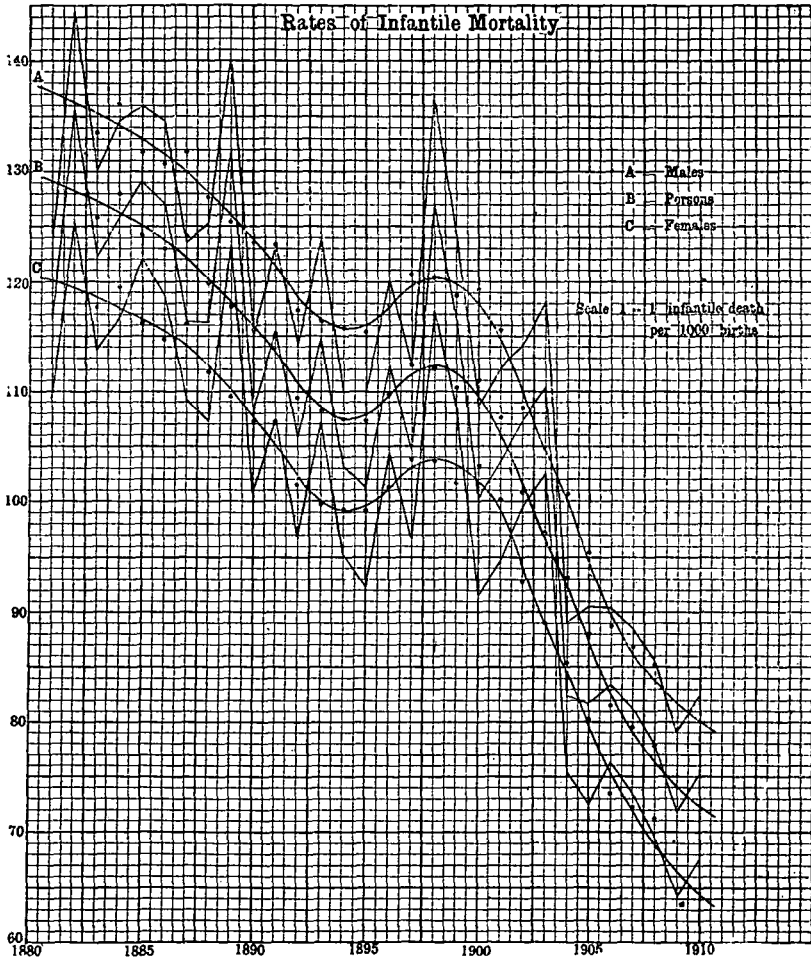
24.—**Occupations of Married Males, and Issue.**—A final tabulation shews the average issue in combination with the occupation of deceased males. When these figures are available for a number of years they will afford some clue to the much debated question as to the decrease in the birth rate among various classes of the population.

**OCCUPATIONS OF MARRIED MALES, AND AVERAGE ISSUE.**  
COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

Occupations.				Deaths of Married Males.	Average Family.
Professional class	...	...	...	589	4.96
Domestic class	...	...	...	362	4.15
Mercantile class	...	...	...	1,203	4.66
Engaged in transport and communication	...	...	...	777	4.94
Manufacturing class	...	...	...	1,216	5.11
Engaged in building and construction	...	...	...	723	5.23
Indefinite industrial workers	...	...	...	1,652	5.24
Agricultural class	...	...	...	1,836	6.82
Pastoral class	...	...	...	461	6.23
Working in mines and quarries	...	...	...	847	5.44
Other primary producers	...	...	...	77	5.12
Independent means	...	...	...	709	5.69
Dependents	...	...	...	21	3.33
Occupation not stated	...	...	...	298	6.01
Total	...	...	...	10,771	5.46

25. **Commonwealth Rates of Infantile Mortality.**—In the diagram hereunder the rates of infantile mortality, as they actually occurred for the years 1881 to 1910, are shewn for males, for females, and for persons by the three series of zig-zag lines in the figure (see curves A, C, and B respectively). These hardly shew what may be called the general trend of this rate, but in order to discover it quinquennial means for successive quinquennia, differing only one year, were calculated. These means are shewn by black dots, then freehand curves were drawn following what may be called the mean position of these dots. These freehand curves, then, represent the general drift of the rates of

COMMONWEALTH OF AUSTRALIA.—RATES OF INFANTILE MORTALITY, 1881 to 1910.



EXPLANATION OF GRAPHS.—The base of each small square represents an interval of half a year, while the vertical height represents an increment in infantile death rate of one per 1000 births, an infantile death rate of sixty per 1000 births being taken as base line for the diagram. The figures on the left hand margin of the diagram represent rates of infantile mortality per 1000 births, while those on the lower margin denote calendar years. The black dots represent a yearly succession of quinquennial means, from which the general trend of the rate of infantile mortality has been ascertained; the upper curve (A) shewing the trend for males, the lower (C) for females, and the middle curve (B) for persons (both sexes combined).

infantile mortality during the period above referred to, unaffected by specially favourable or specially unfavourable years. They prove to be substantially identical in form for males and females, but shew that the death rate for males is about 15 per 1000 greater than that for females throughout. In considering the significance of this result we may, therefore, confine our attention solely to the infantile rate for persons, that is, for both sexes combined.

It will thus be seen that the general improvement in the conditions of infantile life continued from 1881 down to 1894-5, when, however, there was a slight retrogression till 1896, from which date onward there was again continued and marked improvement, that is to say, a rapid falling-off in the rate of infantile mortality. The great significance of this decrease is seen in the fact that the general trend of infantile mortality was about 129 in 1880, and only about 72 in 1910 per 1000 births.

The large differences between the results for individual years shewn by the zigzag lines, and the general trend shewn by curved lines, enable one to discern what year or series of years were specially favourable or specially unfavourable. Thus, it will be seen that the infantile mortality was high in the years 1882, 1889, 1898, and 1903.

It is somewhat remarkable that with the great decrease in infantile mortality there seems to be increasing difficulty in saving male infants as compared with females, and this can be expressed very accurately by a formula giving the number of males per 1000 females. Thus, the number of male infants dying under twelve months of age per 1000 female infants so dying is found to increase as the square of the elapsed time, and may be expressed by the formula:  $M = 1136 + 0.09 (T - 1880)^2$ , in which T denotes the date-year.

It is evident from the above results that the care of infantile life is comparatively in a very satisfactory position in the Commonwealth.

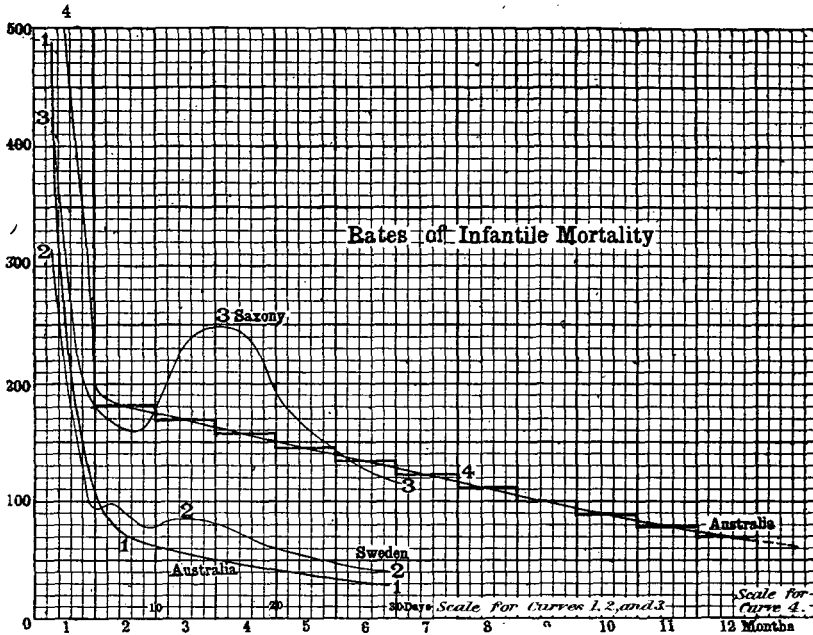
**26. Progressive Diminution of Deaths of Infants during First Twelve Months of Life.**—During the first few days of life the rate of infantile mortality is very high indeed, but falls off at the end of one month after birth, and then, relatively, is fairly steady. In the first few days of life the mode of decrease of the death rate presents certain somewhat remarkable features, which can be fairly well made out for the Commonwealth.\* The results, shewing in 100,000 births the number who die in successive days for the first thirty days of life, is given for Australia by curve 1, for Sweden by curve 2, and Saxony by curve 3. For child-life, Australia furnishes more favourable results than Saxony for each day in the whole period of thirty days; but Sweden, however, shews more favourable results for the first five days, after which the results are distinctly more favourable in Australia than in Sweden. At the end of thirty days the mortality is, in 100,000 births, somewhat under twenty-eight in Australia per diem, somewhat over forty-one for Sweden, and about 134 in Saxony. In Australia the infantile mortality falls off very rapidly for about seven or eight days, and then slowly for the balance of the period. In Saxony there is a sharp recrudescence of mortality, the maximum occurring at fifteen or sixteen days after birth, and the minimum being at eight days after birth. There is also a slight recrudescence in Sweden, occurring at about twelve or thirteen days after birth; but there is no sign of this in the Australian results. In Saxony, the falling-off is again very sharp after the recrudescence attains its maximum.

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\* Unfortunately, the registration records give clear indications that the number of days of life are only approximately stated, and a certain amount of redistribution has preliminarily to be undertaken.

Curve 4, in the diagram, shows how rapidly the rate of infantile mortality diminishes for about the first thirty-three days of life, and how slowly, relatively, the rate diminishes afterwards. Hence, any great change in the preservation of infant life means supreme care for the first month.

RATES OF INFANT MORTALITY.—AUSTRALIA, SWEDEN, AND SAXONY.



EXPLANATION OF GRAPHS.—For curves 1, 2, and 3, the base of each small square represents one day, while the height represents ten infantile deaths per day from 100,000 births. For these curves the left hand marginal marking represents the number of infantile deaths in successive days from 100,000 births.

For curve 4, the base of each large square (comprising twenty-five small squares) represents one month, while the height of each of the component small squares represents ten infantile deaths per day from 1,000,000 births. For this curve the left-hand marginal marking represents number of infantile deaths per day from 1,000,000 births.

The following table exhibits the phenomena of infantile mortality for quinquennial periods:—

INFANTILE MORTALITY IN AUSTRALIA, 1881 to 1910.

Period.	Masculinity of Births.	Average Mortality per 10,000 Births.			Mean Masculinity for Period.	Average Values derived from Curves of General Trend.		
		Males.	Females.	Persons.		Males.	Females.	Persons.
1881-85 ...	1,050	1,338	1,177	1,259	1,136	1,352	1,181	1,278
1886-90 ...	1,049	1,277	1,119	1,200	1,142	1,279	1,119	1,201
1891-95 ...	1,053	1,164	998	1,081	1,167	1,177	1,013	1,097
1896-1900 ...	1,048	1,205	1,037	1,123	1,162	1,191	1,027	1,110
1901-05 ...	1,049	1,049	890	971	1,183	1,050	894	969
1906-1910 ...	1,055	852	704	780	1,211	844	695	770

27. **Pulmonary Tuberculosis and Cancer in Australia, 1881-1910.**—In examining the characteristics of various diseases in Australia, perhaps the most striking feature that presents itself is the remarkable diminution during the past thirty years in the death rates from pulmonary tuberculosis, and the equally remarkable rise in the death rate from cancer. In fact, the advantage in the former case is so well counterbalanced by the disadvantage in the latter, that the combined diseases indicate very little reduction in the death rate.

**DEATH RATES FROM PULMONARY TUBERCULOSIS AND CANCER IN AUSTRALIA  
FOR THE PAST THIRTY YEARS (1881-1910) PER 100,000 OF THE CORRESPONDING  
SEX AND POPULATION.**

Period.	Pulmonary Tuberculosis.			Cancer.			Pulmonary Tuberculosis and Cancer Together.		
	Males.	Females.	Persons.	Males.	Females.	Persons.	Males.	Females.	Persons.
1881-1885	146	113	131	35	36	36	181	149	166
1886-1890	139	101	121	42	43	42	181	144	164
1891-1895	124	88	107	51	48	50	176	136	157
1896-1900	106	81	95	59	58	58	165	140	153
1901-1905	100	77	89	64	61	63	164	139	152
1906-1910	81	69	75	71	70	70	152	139	146

The general results can be seen most strikingly in the diagram hereunder, in which the upper (dotted zigzag) line shews the rates for individual years of pulmonary tuberculosis, and the lower firm (zigzag) line the similar rates for cancer. The middle (zigzag) line, consisting of dots and dashes, shews the rates for the two diseases combined, also for individual years. The death rate for males from pulmonary tuberculosis is, roughly, 36 per cent. greater than for females, while for cancer it is only 3 per cent. greater for males than for females. It has been found that the death rates can be very accurately expressed by a simple formula based upon the lapse of time since 1880. These are given in the note hereunder.\*

It will be observed that for the two diseases combined there is still a decrease in the rate of mortality, but it is only very slight; in other words, the advantages arising from advances in medicine, hygiene, etc., so far as tuberculosis is concerned, are nearly masked by the development of cancer.

The masculinity of pulmonary tuberculosis is diminishing as time advances; in other words, death from this disease, at present striking at male life more forcibly than at female life, is tending towards equality of incidence.

It is proper here to observe it does not follow that it is unimportant, from the economical standpoint, which disease preponderates, for the reason that the incidence of cancer is more marked at a late period of life, when life's economic value is diminishing; while the marked incidence of tuberculosis is in the earlier periods of life, viz., before the human being has recouped the economic expenditure involved in his rearing and education.

\* P denotes deaths from pulmonary tuberculosis in a population of 100,000 persons of same sex, or of both sexes combined, as the case may be; and the subscript letter m, f, or p denotes males, females, persons; T denotes the date year.

Pulmonary Tuberculosis.

$$P_m = 157 - 2.6 (T - 1880)$$

$$P_f = 115 - 1.7 (T - 1880)$$

$$P_p = 137 - 2.2 (T - 1880)$$

Cancer.

$$C_m = 32 + 1.4 (T - 1880)$$

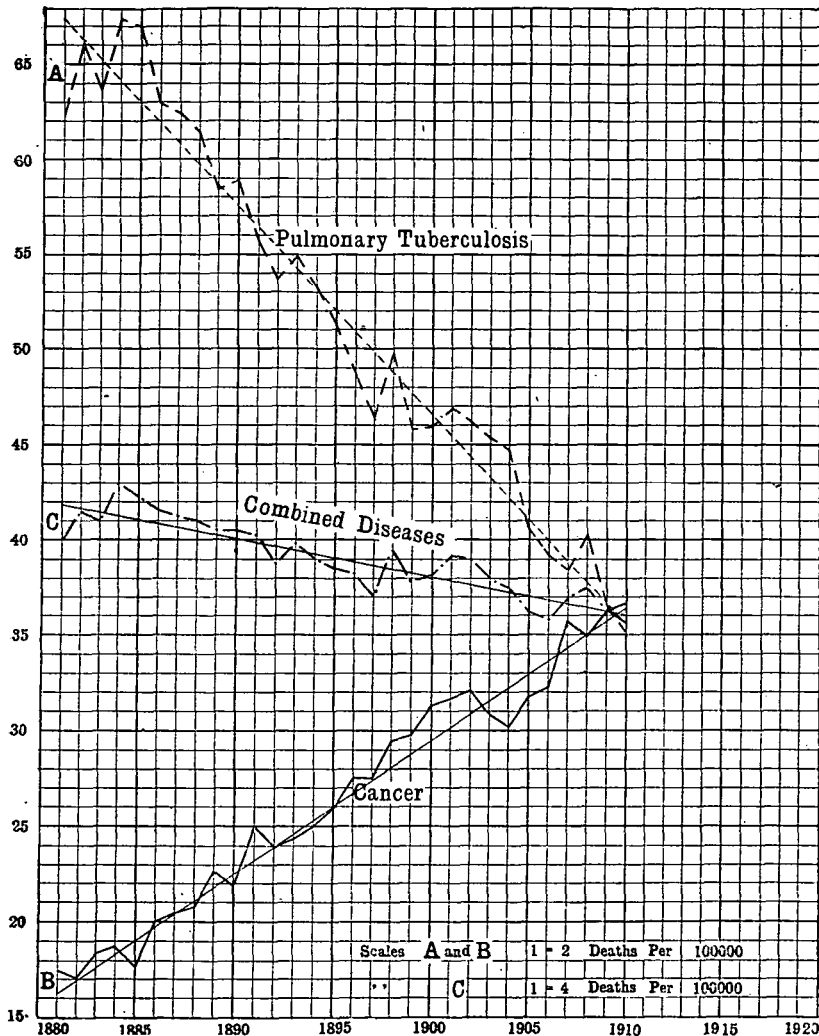
$$C_f = 31 + 1.4 (T - 1880)$$

$$C_p = 31 + 1.4 (T - 1880)$$

For both diseases combined, the formula may be found by adding the constants and coefficients, i.e.,  $P_p + C_p = 168 - 0.8 (T - 1880)$ .

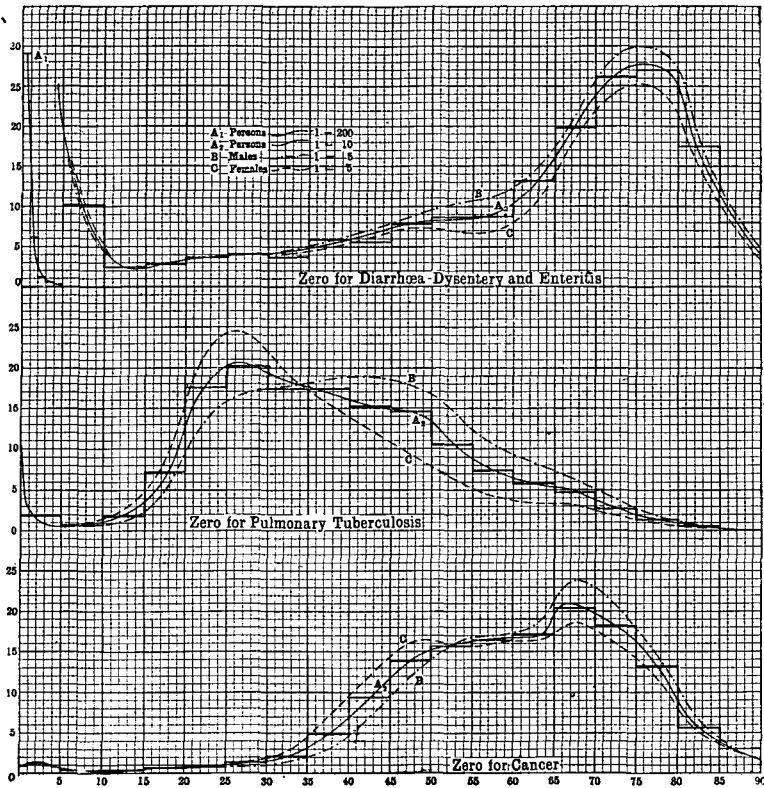
In order to make this point quite clear the two lower curves (see the diagram hereunder) are given, the upper (or middle) curve shewing the number of persons dying at each age from pulmonary tuberculosis, the lower one shewing the number dying from cancer in a population of 10,000,000. Restricting the consideration to both sexes combined (persons) it will be seen that the heaviest incidence of pulmonary tuberculosis is at the age of twenty-six or twenty-seven, while that for cancer is at the age of sixty-seven.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES FOR PULMONARY TUBERCULOSIS AND CANCER, 1881 to 1910.



EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, while the height in the cases of curves A and B represents one death per 50,000 of population; and in the case of C, one death per 25,000 of population. In the cases of A and B, the base line (15) represents thirty deaths per 100,000; and in the case of C, it represents sixty deaths per 100,000. Thus, for curves A and B, the numbers on the left-hand column have to be doubled; and in the case of curve C, have to be quadrupled to give the number per 100,000. These curves indicate the linearity of trend of the diseases, and the fact that this trend is in opposite directions.

COMMONWEALTH OF AUSTRALIA.—DEATHS AT VARIOUS AGES, FOR VARIOUS DISEASES.

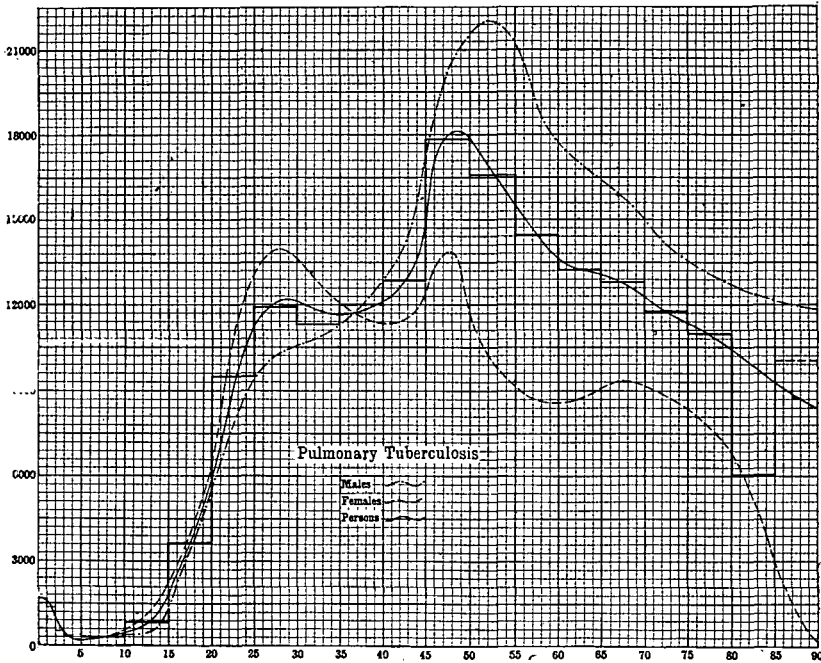


EXPLANATION OF GRAPHS.—The curves represent the number of deaths per annum at each age in a total population of 10,000,000, corresponding to the Australian experience for the four years 1907-10, the population of 10,000,000 being assumed to be distributed according to sex and age in the same proportions as the mean Australian population for 1907-10. In each case the continuous line represents persons, the broken line represents females, and the dot and dash line represents males. The base of each small square represents one year of age, while the height represents 200 deaths in a total population of 10,000,000 in the case of curve A 1, ten deaths in the case of curve A 2, and five deaths in the case of curves B and C.

In the above diagrams the curve marked "A" indicates the result for persons, while the curves marked "B" and "C" represent the similar results for males and females respectively.

28. **Frequency of Pulmonary Tuberculosis and Cancer according to Age.**—If the death rates be based on the actual number of persons living at each age, that is, if they be deduced from the number who die from the diseases in question in various age-groups and the number of persons of the same age actually living, then we find for those affected with pulmonary tuberculosis that the lowest incidence occurs at about five years of age. Then the rate quickly increases till the age twenty-eight or twenty-nine is reached. The death rate then falls off slightly, and increases again until the maximum is reached at about forty-eight or forty-nine years of age, after which the death rate of the number at risk again fairly rapidly falls off. These results are shewn on the diagram hereunder.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES OF PERSONS OF DIFFERENT  
AGES, PULMONARY TUBERCULOSIS, 1907 TO 1910.



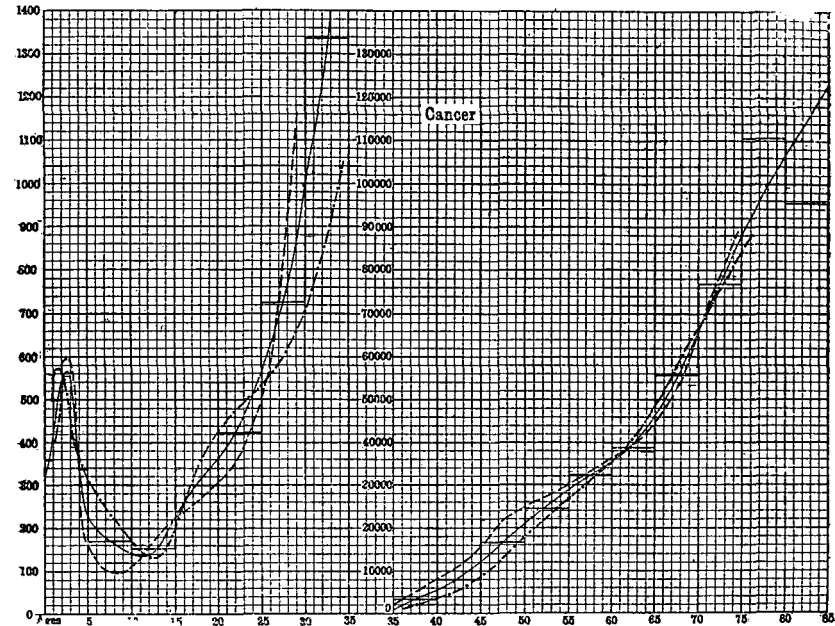
EXPLANATION OF GRAPHS.—The curves represent the number of deaths per 10,000,000 of population at each age, the continuous line representing the number of deaths per 10,000,000 of total population, the broken line representing the number of female deaths per 10,000,000 of female population, and the dot and dash line representing the number of male deaths per 10,000,000 of male population. The base of each small square represents one year of age, and the vertical height a death rate of 300 per 10,000,000. The figures on the left-hand margin represents the death rate per 10,000,000, those on the lower margin represent years of age.

The death rate for cancer, based on the total number living of the corresponding age, shews quite different characteristics. Thus, it attains its maximum value at the age of about two, falls to a minimum at about age eleven or twelve, and then continually and very rapidly increases for all later ages, as is evident in the following diagram on page 234.

Of the two diseases it will thus be seen that, economically, pulmonary tuberculosis is the more serious. Thus, although cancer is so increasing as nearly to obliterate the effect of decrease in death from tuberculosis, it is still a matter for congratulation that the ravages of tuberculosis have been greatly reduced. In other words, pulmonary tuberculosis strikes at the race at a period of life when its promise lies in the future, and before the heavy expenses of rearing and education have borne fruit in the various economic activities. Cancer, on the other hand, strikes at life later, after the period of highest economic activity, in fact when that activity is declining.



COMMONWEALTH OF AUSTRALIA.—DEATH RATES OF PERSONS OF DIFFERENT AGES, CANCER, 1907 TO 1910.



EXPLANATION OF GRAPHS.—The broken line with dots — — — — — denotes the results for males; the plain broken line — — — — — denotes those for females, and the continuous line those for persons (both sexes combined).

The base of each small square represents one year of age, while the height represents a death rate of twenty per 1,000,000 of population in the curve on the left of the diagram, and a death rate of 2000 per 1,000,000 of population in the curves on the right. The marginal figures on the left of the respective curves denote rates of mortality per 1,000,000 of population at the respective ages which are indicated in the lower margin of the diagram.

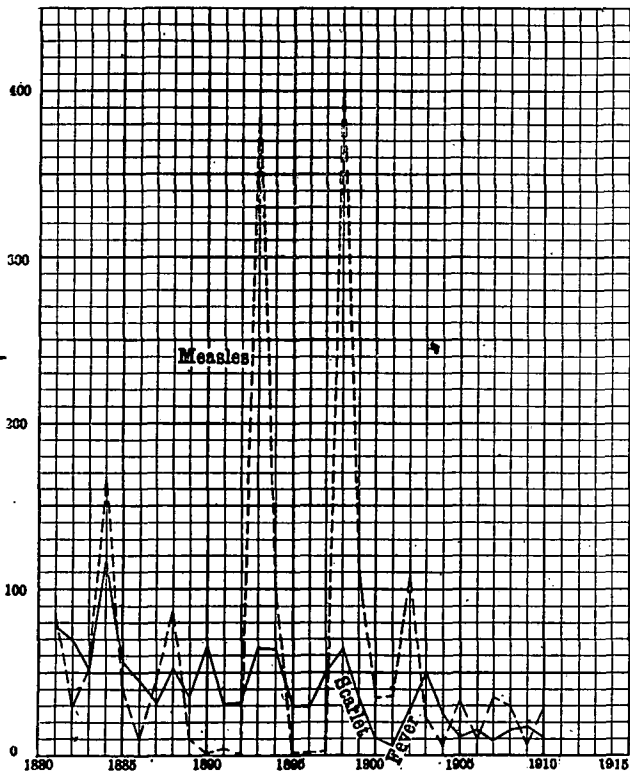
29. The Incidence of Scarlet Fever, Measles, Whooping Cough, Diphtheria and Croup, Typhoid, Diarrhoea, Enteritis, and Dysentery. — In the following table is shewn the average quinquennial incidence of these diseases from 1881 to 1910 inclusive:—

DEATHS PER MILLION OF THE CORRESPONDING SEX PER ANNUM FOR VARIOUS DISEASES, AUSTRALIA, 1881-1910.

Period.	Masculinity of Population.	Scarlet Fever.		Measles.		Whooping Cough.		Diphtheria and Croup.		Typhoid.		Diarrhoea, Enteritis, and Dysentery.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1881-1885	1177	68	85	68	83	125	201	414	453	544	564	1355	1184
1886-1890	1172	40	53	30	34	127	203	492	535	548	489	950	919
1891-1895	1136	36	51	98	99	140	200	325	375	278	222	631	561
1896-1900	1117	32	45	108	112	107	150	146	158	401	277	557	498
1901-1905	1095	21	27	39	44	90	121	101	105	252	176	372	306
1906-1910	1084	12	16	22	23	102	124	100	106	190	127	838	734

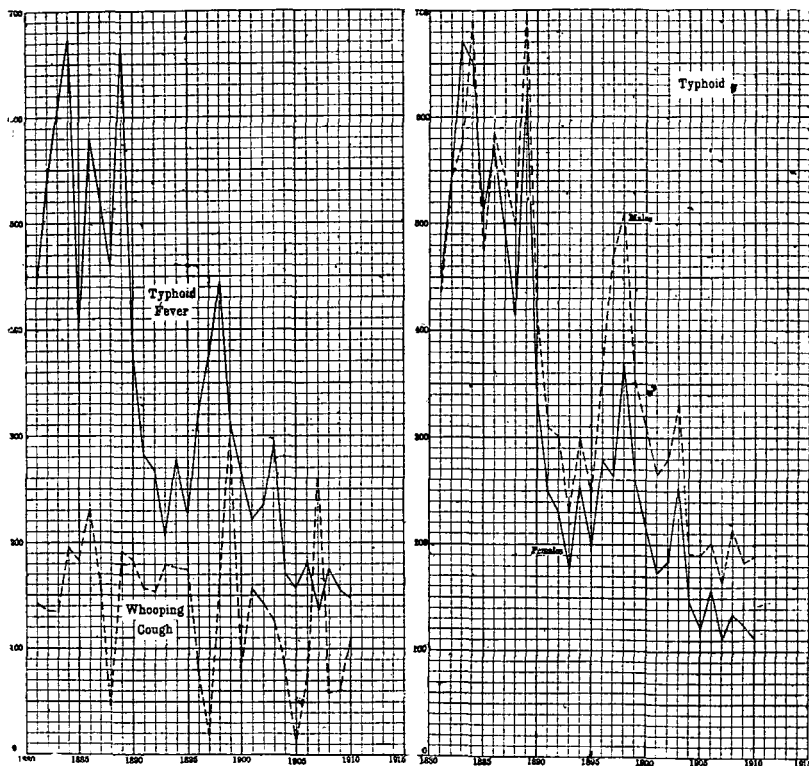
These figures shew in general a very decided decrease in death rates. In the diagram, which gives yearly rates for measles and scarlet fever from 1881 to 1910, one can recognise how sharp were the epidemics of the former disease in 1884 and 1898. Scarlet fever shews less marked fluctuations, which in general synchronise with those of measles. The next two diagrams shew the annual incidence of typhoid, whooping cough, diarrhoea, with enteritis and dysentery, and of diphtheria and croup. Although there are striking fluctuations in the death rate from typhoid it is at once evident, both from the left-hand diagram for "persons" and the right-hand one for each sex, that the incidence of the disease has been enormously diminished. This has been brought about by improvement in water supply and sewerage, and also by a purer milk supply. The death rate for whooping cough gives no decided indications, and its incidence is very irregular, but, as shewn in the diagram on page 237 (right-hand side), its incidence in the case of males and in the case of females, while by no means identical, shews some general correspondence.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES FOR MEASLES AND SCARLET FEVER, 1881 TO 1910.



EXPLANATION OF GRAPH.—The base of each small square represents one calendar year, and the vertical height a death rate of ten persons per 1,000,000 of population. The continuous line relates to scarlet fever, and the broken line to measles. The figures on the left margin represent number of deaths per 1,000,000 of population; those on the lower margin calendar years. The diagram shews very strikingly the intensity of the epidemics of measles for the years 1884, 1898, and 1900.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES FOR TYPHOID FEVER  
AND WHOOPING COUGH, 1881 to 1910.

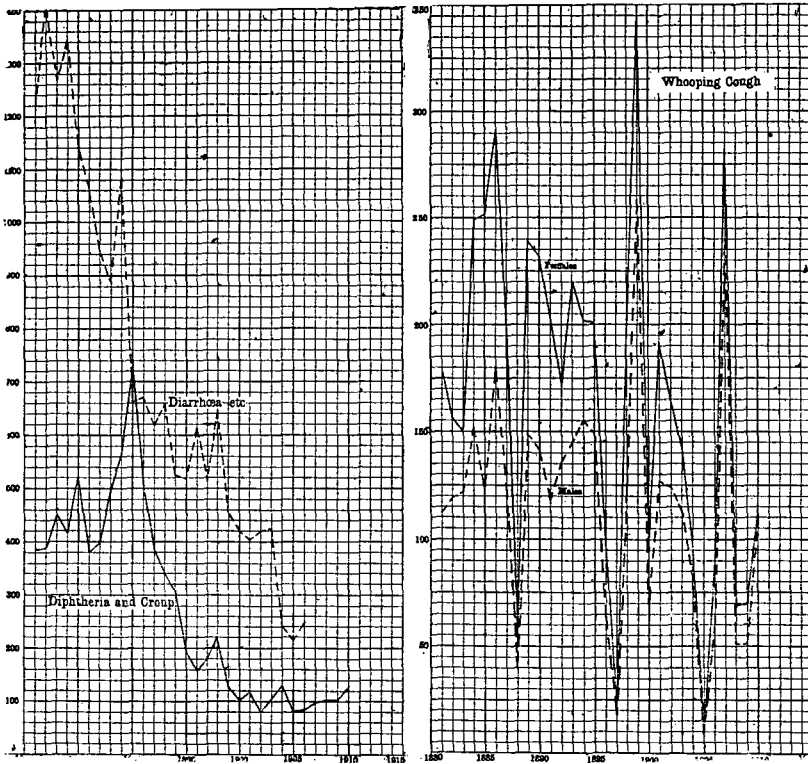


EXPLANATION OF GRAPHS.—In the diagram to the left, both results are for persons (both sexes combined), the upper or firm line denoting the mortality for typhoid fever; the lower or broken line, the mortality for whooping cough. In the diagram to the right, the results shewn by broken lines indicate the mortality from typhoid for males; and the firm line shews the mortality for typhoid for females.

The base of each small square represents one calendar year, while the height represents a death rate of ten per 1,000,000 of mean population. The left hand marginal marking represents death rates per 1,000,000 of population in each case; while the figures on the lower margin are the calendar years at quinquennial intervals.

The changes in the death rate for diphtheria and croup, as shewn in the diagram on page 237, are very striking. Attaining a high maximum in 1890, it has, on the whole, been steadily dropping ever since. In severity of its incidence there is no synchronism with diarrhoea.

The numbers dying at different ages from diarrhoea, dysentery, and enteritis are shewn in the diagram on page 232, which indicates that death is very frequent in early infancy, reaches a minimum at the age of about thirteen years, then steadily progresses till about sixty, when it sharply increases till about seventy-six, at which age it again falls off in frequency.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES FOR DIARRHŒA, &c., FOR  
DIPHTHERIA AND CROUP, AND FOR WHOOPING COUGH, 1881 TO 1910.

EXPLANATION OF GRAPHS.—The diagram on the left relates to death rates of persons (males and females combined) from diarrhœa, etc., shewn by a broken line, and from diphtheria and croup, shewn by a continuous line; and that on the right relates to the male and female death rates (separately shewn) from whooping cough, the broken line denoting results for males and the continuous line those for females. In both cases the base of each small square represents one calendar year, while the vertical height in the diagram on the left represents a death rate of twenty per 1,000,000 of population, and in that on the right a death rate of five per 1,000,000 of male and female population, respectively. The figures on the left margin of each diagram are death rates per 1,000,000 of population, those on the lower margins are calendar years.

30. **Masculinity of Death from Various Diseases.**—The mean quinquennial results given in the table hereunder furnish information as to the relative frequency of death through particular diseases in the two sexes, the number of deaths of males per 1000 deaths of females being shewn.

**FREQUENCY OF DEATHS OF MALES FROM VARIOUS DISEASES, PER 1000 FEMALES,  
WHEN THE NUMBERS OF EACH SEX ARE EQUAL IN THE GENERAL  
POPULATION—AUSTRALIA, 1881-1910.**

Period.	Scarlet Fever.	Measles.	Whooping Cough.	Diphtheria and Croup.	Typhoid.	Diarrhœa, Enteritis, & Dysentery.
1881-1885	808	863	636	913	966	1,143
1886-1890	761	866	625	921	1,121	1,034
1891-1895	750	992	704	866	1,248	1,126
1896-1900	711	970	711	921	1,446	1,119
1901-1905	778	891	745	964	1,430	1,214
1906-1910	762	982	818	939	1,493	1,142
Mean of quin- quennial values	762	928	706	921	1,284	1,130

It will be seen that, except in the case of whooping cough and typhoid, there is no definite evidence of any change in the relative frequency of death for the several diseases in the two sexes. Hence, with the exception mentioned, the mean of the quinquennial means may be taken as the constant probability of the death of males, the probability of the death of females being taken as 1000.

In the case of whooping cough and typhoid this probability, shewn in the last line, is a mean one for the period 1881 to 1910, but is at the present time too small, and appears to change nearly linearly with the lapse of time.\*

**31. The Monthly Variations in the Frequency of Deaths from Various Causes.**—The seasonal variation in several causes of death dealt with has been deduced from the number of deaths recorded in each month during the period of four years 1907 to 1910. Those recorded were so corrected as to relate to months of equal length and a constant population. These corrected results are expressed as the number of deaths per month per 10,000,000 of population, and are as follows:—

**MONTHLY VARIATION IN DEATHS FROM VARIOUS CAUSES, ADJUSTED FOR EQUALISED MONTHS AND CONSTANT POPULATION.**

DEATHS PER MONTH PER 10,000,000 OF POPULATION.

Month.	Pulmon- ary Tuber- culosis.	Cancer.	Diarrhœa etc.	Whoop- ing Cough.	Typhoid.	Measles.	Scarlet Fever.	Diph- theria and Croup.
January ...	609	612	1,444	85	200	21	7	50
February ...	561	634	1,293	98	217	9	9	57
March ...	584	606	1,137	72	241	8	10	78
April ...	563	607	996	74	216	12	11	108
May ...	626	610	659	99	140	12	17	122
June ...	618	593	376	92	118	10	16	133
July ...	675	568	293	124	56	12	11	123
August ...	699	581	239	139	48	22	12	98
September ...	671	614	262	130	47	36	13	96
October ...	712	584	417	105	36	36	11	63
November ...	594	581	861	99	80	46	8	73
December ...	601	620	1,246	95	133	27	11	72

From these results have been deduced† the curves shewn on the diagram hereunder, from which it will be observed that the time of the deadliest activity of any one disease is by no means generally coincident with that of any other. Thus, the sharpest incidence of particular diseases during the year is as follows:—

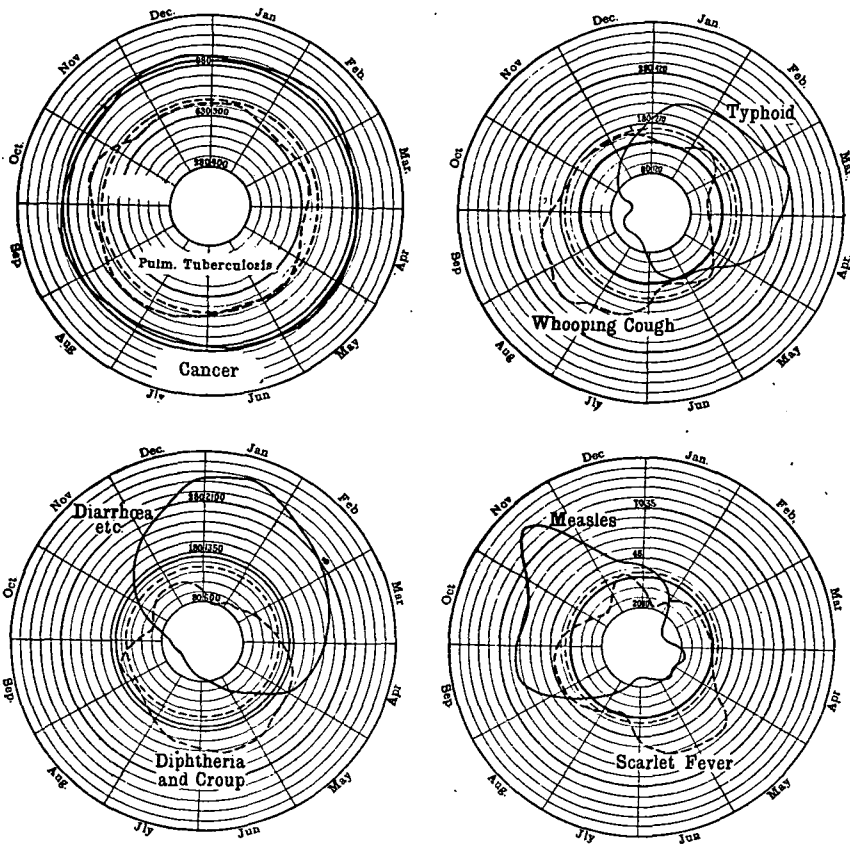
Pulmonary tuberculosis	middle October‡	Diarrhœa, etc.	... middle January
Cancer ...	February‡	Diphtheria, etc.	... June
Typhoid ...	March	Measles ...	... November
Whooping cough ...	August	Scarlet fever	... May

\* The masculinity in these cases can be expressed very accurately by a formula. Assuming that a linear change represents the results with sufficient accuracy, we have for whooping cough  $M = 593 + 7.3 (T - 1880)$ ; for typhoid,  $M = 951 + 21.5 (T - 1880)$ , in which  $M$  is the masculinity or number of males dying per 1000 females dying, when the number of the sexes is equal.

† See a paper entitled "Studies in Statistical Representation: Statistical Applications of the Fourier Series," by G. H. Knibbs, C.M.G., etc., Journ. Royal Society N.S.W., Vol. XLV., pp. 76-110.

‡ Doubtful.

## COMMONWEALTH OF AUSTRALIA, 1907 TO 1910.



EXPLANATION OF GRAPHS.—The graphs based on the monthly totals of deaths over the period 1907-10 shew at any moment the relative frequency of the following diseases, viz., pulmonary tuberculosis and cancer; typhoid and whooping cough; diarrhoea, dysentery and enteritis, and diphtheria and croup; and measles and scarlet fever. For each disease a circle is drawn (a continuous or a broken line as the disease is represented by a continuous or broken curve) shewing the position corresponding to a uniform distribution throughout the year, and this indicates whether the value at any particular time is above or below the average for the disease. The numbers on the diagram denote the aggregate per month per quadrennium, and the intervals between each small circle represent the following numbers respectively where A denotes Arabic figures and E Egyptian figures.

Cancer ... ..	A: 1 interval represents 70 deaths.
Pulmonary Tuberculosis ... ..	E: " " 100 "
Whooping Cough ... ..	A: " " 20 "
Typhoid... ..	E: " " 30 "
Measles ... ..	A: " " 5 "
Scarlet Fever ... ..	E: " " 2.5 "
Diphtheria and Croup ... ..	A: " " 20 "
Diarrhoea, etc. ... ..	E: " " 150 "

## APPENDIX.—SUICIDES.

1. **Suicide in Australia.**<sup>1</sup>—The course of suicide in Australia presents certain features which call for special comment, viz.:—(i.) the constancy of the measure of the suicidal tendency; (ii.) its constancy in respect of the relative numbers of each sex; and (iii.) its periodicity according to seasons or months.

Suicide does not prominently figure among the causes of death, being only 1.166 per 10,000 of the population, and 1.13 per cent. of deaths from all causes. The suicide rate from 1858 to the present time was as follows:—

**ANNUAL RATE OF SUICIDES 'PER 10,000,000 PERSONS IN THE COMMONWEALTH,  
1858 to 1910.**

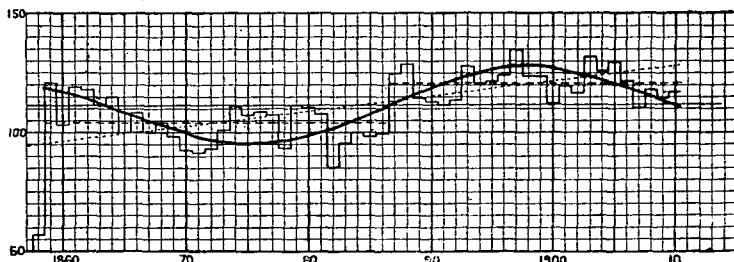
Year.	No. per 10 million.	Year.	No. per 10 million.	Year.	No. per 10 million.	Year.	No. per 10 million.	Year.	No. per 10 million.
1858	575*	1870	926	1880	1,107	1890	1,133	1900	1,125
1859	1,207	1871	917	1881	1,076	1891	1,117	1901	1,192
1860	1,037	1872	933	1882	859	1892	1,140	1902	1,170
1861	1,188	1873	1,010	1883	952	1893	1,275	1903	1,315
1862	1,179	1874	1,108	1884	995	1894	1,202	1904	1,260
1863	1,117	1875	1,077	1885	983	1895	1,217	1905	1,292
1864	1,148	1876	1,084	1886	995	1896	1,241	1906	1,214
1865	1,003	1877	1,078	1887	1,245	1897	1,350	1907	1,109
1866	1,082	1878	934	1888	1,283	1898	1,239	1908	1,174
1867	1,002	1879	1,110	1889	1,148	1899	1,233	1909	1,145
1868	1,041	1880	1,107	1890	1,133	1900	1,125	1910	1,166
1869	981								
Mean	for whole period	...	...	...	...	...	...	...	1117.6

1. The information is obtained from an article with the title "Suicide in Australia: a Statistical Analysis of the Facts." By G. H. Knibbs, C.M.G., etc. Journal Royal Society N.S.W., volume xiv., pp. 225-246, to which reference should be made for details.

NOTES.—1858-9, State of Victoria only; 1860 to 1866, States of New South Wales and Victoria; 1867 to 1872, States of New South Wales, Victoria, and South Australia; 1873 to 1886, Queensland and Tasmania also included; 1887 to 1910, All the States of the Commonwealth. \* The result for 1858 is abnormal.

This change of frequency is indicated in the following diagram:—

SECULAR FREQUENCY OF SUICIDE IN AUSTRALIA.



EXPLANATION OF GRAPH.—Each vertical division represents five suicides per annum per million of the general population, and each horizontal division denotes one year. The rectangular lines shew the actual observed group-rate of suicide for the years 1858 to 1910. The general mean is shown by a firm horizontal line, and the two horizontal broken lines shew the averages for the period 1859 to 1886 and for the period 1887 to 1910. The fine inclined dotted line shews the general trend of the frequency for the period 1889 to 1910, if that trend be regarded as linear in character. The heavy curved line shews the general trend on the assumption that it tends to be periodic, which assumption agrees more closely with the observed frequency than the assumption of a linear trend.

The aggregate number of suicides in the whole period 1859 to 1910 inclusive was 15,242, and since the sum of the annual populations was 133,136 millions, the actual mean rate of suicide for the whole period was 114.48 per million per annum. The average of the annual numbers per million is only 111.76, hence this is the mean tendency to commit suicide about which fluctuations take place from year to year. In respect of differences from the curve shewn in the diagram representing the probable general trend of the phenomena, it may be noted that the relatively large increase which characterised 1887 and 1888 synchronised approximately with a period of excessive speculation, viz., the days of the silver and land booms. The large value for 1893 corresponded to the bank failures and collapse of the land boom. The high value for 1897 to some extent followed the incidence of drought conditions, viz., in 1895 and subsequent years.

The low value for 1900 synchronised with the South African war, when many men were drawn from Australia for military service in South Africa. The high values for 1903, 1904, and 1905, corresponded to the period of the most serious drought in Australia.

Practically the frequency of suicide for the whole of the period 1859 to 1886 was under the general average frequency, and for the whole of the period 1887 to 1910 it was above the average for Australia. The mean frequency per 1,000,000 population for 1859 to 1886 inclusive was 104.04 and from 1887 to 1910 inclusive was 120.78. But a reference to the figure will shew that the assumption of a slow linear progression\* does not really satisfactorily accord with the facts. The general trend is, however, well exhibited by the curve shewn by the heavy firm line. This has a 46-year period, and can be expressed by a formula† showing a fluctuation reaching a maximum of only 15%.

It is perhaps remarkable that the rate for Australia should exceed that for England and Wales, and greatly exceed that for the United Kingdom taken as a whole; and, seeing that the race element is identical, since Australia is almost wholly of British origin, the fact seems worthy of further investigation.

From 1881 to the present time (1910), the countries whose suicide rates most closely approximate to that of Australia, are Sweden and Belgium.

The great range of frequency, viz., from Ireland, with only 34 per million, to Switzerland, with, say, 230—nearly seven times the frequency for Ireland—is worthy of note; also that Australia occupies approximately the mean position between these extremes. Mere geographical position on the earth's surface, or average annual temperature, etc., has apparently no marked influence on the suicidal frequency, and it would seem also that the influence of race is negligible. Probably social and economic conditions are the most potent factors governing the phenomena of suicide.

Respecting the question whether the suicidal tendency is or is not growing, it may be pointed out that it is clear, from the table on the following page, that there is a fairly steady increase in the frequency of suicide in the civilised world. The general result, given in the last line of the table, shews that suicide is decidedly on the increase, but also that the rate of increase is steadily diminishing. The result can be expressed by a formula.‡

\* Such a progression would be represented by the formula  $S = 111.8 + 0.65 (T - 1884)$ , and is shewn in the figure by the dotted straight line.

† Viz.: 
$$S = 111.8 + 16.7 \sin 2\pi \frac{T - 1886}{46}$$

In the formula  $S$  is the number of persons annually committing suicide for an Australian population of 1,000,000, and  $T$  is the year in question.

‡ The number of suicides per million per annum ( $S$ ) for the civilised world generally would appear to be roughly given for any year by the expression

(3)  $S = 112 + 2.2 (T - 1873) - 0.022 (T - 1873)^2$   
in which  $T$  is the year in question. This would imply that the rate per million per annum ( $dS/dT$ ) is increasing, as expressed by the following formula, viz.:

(4)  $dS/dT = 2.2 - 0.044 (T - 1873)$ ;  
which gives for the rate of increase per million per annum for 1873, 2.20, and for 1910 only 0.57—a very considerable reduction of the rate of increase, and one which indicates that there is some likelihood of the increase ceasing altogether.



The average rate of suicide for the period 1859 to 1910 of 111.8 per million does not exceed very greatly the rate for England and Wales. For comparison the results are given for various countries for successive quinquennia from 1871 onwards, and are as follows :—

### SUICIDE RATES PER MILLION INHABITANTS FOR VARIOUS COUNTRIES.<sup>1</sup>

Country.	Period.							
	1871 to 1875	1876 to 1880	1881 to 1885	1886 to 1890	1891 to 1895	1896 to 1900	1901 to 1905	1906 to 1910
Bosnia and Herzegovina	...	...	...	6	19	37	40	...
Ireland	18	18	22	24	29	29	33	34 <sup>e</sup>
Italy	35	41	49	50	57	63	63	...
Scotland	33	47	53	58	60	60	60	57 <sup>e</sup>
Finland	29	33	39	40	48	47	55	...
Servia	...	...	38	37	36	40	51	...
Netherlands	36	44	53	56	61	55	64	...
Norway	75	72	67	67	65	55	64	...
Rumania	...	...	...	42	55	70	...	...
England and Wales	66	74	75	79	89	89	103	102 <sup>f</sup>
Australia	100.9	106.3	97.3	116.1	119.0	123.7	124.5	116.2
Belgium	70	94	107	119	129	119	124	...
Sweden	81	92	97	118	144	119 <sup>a</sup>	124	...
Austria	106	162	162	160	159	158	173	...
Hungary, Kingdom...	...	...	84	102 <sup>b</sup>	123 <sup>c</sup>	163	176	179 <sup>e</sup>
Hungary, proper	...	76 <sup>d</sup>	89	108 <sup>b</sup>	132 <sup>c</sup>	177	191	192 <sup>e</sup>
Japan	...	110 <sup>d</sup>	146	159	179	185	201	189 <sup>e</sup>
German Empire	...	...	211	205	211	202	212	...
Denmark	243	267	248	261	250	221	227	194 <sup>f</sup>
France	144	168	194	216	241	232	228	...
Switzerland	...	227	233	221	222	222	232	227 <sup>f</sup>
General result	112	122	133	139	151	152	160	158 ?

1. See Statistik und Gesellschaftslehre. Prof. G. v. Mayr, Bd. III., p. 279.

<sup>a</sup> This sudden decrease is due to the fact that cases of death by poisons self-administered for purposes of abortion have been excluded.

<sup>b</sup> For 1886-7.    <sup>c</sup> For 1892-5.    <sup>d</sup> For 1878-80.    <sup>e</sup> For 1906-08.    <sup>f</sup> For 1906-09.

It is a remarkable fact that in the western world the frequency of suicide among men ranges from double to quintuple the frequency among women, while in India and Burmah the relation is reversed, that is, suicide is more frequent there among women than men.

For Australia, for the four decennia between 1871 and 1909 inclusive (omitting West Australian suicides, for which figures are not available till 1896), the results are as follows :—

### SUICIDES IN THE COMMONWEALTH, 1871-1909.

Years.	Males.	Females.	Total.	Males. (Per 1000 of Total Suicides.)	Females. (Per 1000 of Total Suicides.)
1871-1909	11,051	2,250	13,301	831	169
1900-1909	3,992	811	4,803	831	169

This constancy of relation of 83.1% males and 16.9% females, approximately true for each decennium, shews that in the Commonwealth of Australia 4.92 males commit suicide for each female who commits that act, a ratio that is exceeded by only one country—Switzerland. The relative number of males and females has, however, varied. If allowance be made for this we have—

Years 1871-1909	...	825 males	175 females per 1000
1900-1909	...	830 „	170 „ „

For comparison, the crude ratios are given in the following table:—

TABLE SHEWING CRUDE RATIO OF MALE TO FEMALE SUICIDES IN VARIOUS COUNTRIES.

Country.	Period	Ratio.	Country.	Period.	Ratio.
Japan ...	1881 - 1905	1.65	Prussia ...	1881 - 1905	3.80
Servia ...	1881 - 1905	2.06	German Empire ...	1881 - 1905	3.85
Scotland ...	1881 - 1905	2.52	Norway ...	1881 - 1905	3.85
Rumania ...	1891 - 1900	2.68	Sweden ...	1881 - 1905	3.91
Bulgaria ...	1896 - 1905	2.96	Netherlands ...	1881 - 1905	4.05
England & Wales	1881 - 1905	2.98	Italy ...	1881 - 1905	4.05
Scotland ...	1896 - 1905	3.00	Spain ...	1881 - 1905	4.22
Ireland ...	1881 - 1905	3.00	Finland ...	1881 - 1905	4.31
Russia ...	1881 - 1890	3.38	Sweden ...	1901 - 1905	4.59
France ...	1881 - 1905	3.55	Belgium ...	1881 - 1905	4.93
Austria ...	1881 - 1905	3.58	Australia ...	1881 - 1905	4.95
Denmark ...	1881 - 1905	3.62	Switzerland ...	1881 - 1905	5.22

#### INDIA, &c., 1907.

Country.	Ratio.	Country.	Ratio.
Burmah ...	1.16	East Bengal and Assam ...	0.67
Central Provinces ...	1.00	Eastern Territory ...	0.59
Bombay ...	0.92	Bengal ...	0.57
Punjab ...	0.79	North West Provinces ...	0.55
Madras ...	0.74	Agra and Oudh ...	0.34

The figures in the lower table above are for India and Burmah, where generally there are more female than male suicides. This fact illustrates the great difference between the social condition in the two civilisations.

Since the relative number of males and females differs in each country, the crude rates are not *quite* satisfactory.\* The comparisons of the suicides within the various age-groups shew the progression of suicidal tendency through the different stages of life.

\* What has been called the corrected frequency relation, does not yield very different results. (See Op. cit. pp. 233, 234.)

**NUMBER OF PERSONS PER MILLION OF EACH AGE-GROUP AND EACH SEX  
COMMITTING SUICIDE—VARIOUS COUNTRIES.\***

**MALES.**

Age-group.	Austria, 1896-1901.	Baden, 1891-1905.	Buenos Ayres, + 1899-1908.	Denmark, 1886-1905.	France, 1893-1906.	Italy, 1901-1905.	Massachusetts, 1876-1885.	Prussia, 1891-1905, 1908.	Saxony, 1903-1907.	Sweden, 1891-1907.	Australia, 1891-1910.	† Simple Mean including Australia.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
10-14 ...	2	20	4	36	28	5	2	31	53	—	5	18
15-19 ...	165	161	175	144	161	71	35	186	341	42	32	134
20-24 ...	330	317	233	291	277	166	103	331	442	170	119	255
25-29 ...	384	376	264	313	374	138	136	315	482	238	190	295
30-39 ...	313	380	212	431	364	126	159	396	505	313	272	326
40-49 ...	423	594	276	700	537	165	230	654	929	442	403	508
50-59 ...	566	870	193	1112	726	208	365	880	1297	574	563	716
60-69 ...	585	987	187	1183	869	223	445	951	1589	588	602	802
70-79 ...	621	1086	187	1284	909	210	551	942	1664	554	556	838
80 ...	621	1408	187	1210	954	202	264	1105	2780	468	443	946

**FEMALES.**

	1	11	4	6	21	1	2	8	26		4	8
10-14 ...	1	11	4	6	21	1	2	8	26		4	8
15-19 ...	92	57	235	82	131	34	16	98	192	20	40	76
20-24 ...	130	74	206	127	170	48	31	115	177	52	68	99
25-29 ...	122	80	120	94	244	40	43	90	160	54	53	98
30-39 ...	82	120	78	89	338	37	53	97	149	56	76	100
40-49 ...	86	149	56	178	342	37	56	134	243	84	86	140
50-59 ...	99	139	25	226	444	43	64	175	338	114	88	173
60-69 ...	99	184	25	279	515	42	82	193	302	115	87	190
70-79 ...	147	171	25	270	528	46	55	215	437	91	91	205
80 ...	147	171	25	386	526	38	24	259	557	89	57	225

\* The results, excepting for Australia, are computed from the data furnished in the work of Prof. G. v. Mayr, of Munich. Op. cit. Bd. III., pp. 313-316.

† Buenos Ayres not included in mean.

The suicidal frequency per million for each five-year group in Australia, based on the records of the last two decades,<sup>1</sup> is as follows:—

**SUICIDES PER MILLION IN EACH AGE GROUP AND SEX—AUSTRALIA,**

1891 TO 1910.

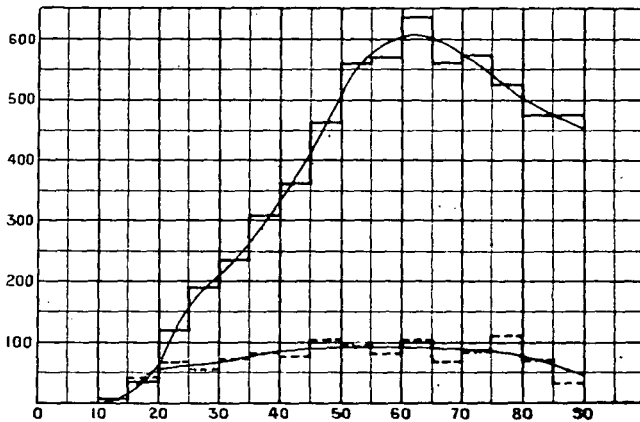
Age-group.	Males.	Females.	Age-group.	Males.	Females.
10-14	5	4	50-54	559	94
15-19	32	40	55-59	569	81
20-24	119	67	60-64	637	102
25-29	190	53	65-69	560	69
30-34	235	71	70-74	573	82
35-39	309	81	75-79	524	109
40-44	361	76	80-84	474	70
45-49	461	102	85	475	32

<sup>1</sup> These are computed on the basis of the age constitution at the 1901 Census, which is sufficiently accurate for the purpose in view.

These numbers disclose the frequency of suicide at different ages, and thus the age at which the tendency is most strongly expressed. Since the total number of persons in any age-group ordinarily diminishes with increase of age, and differs both from period to period as well as from country to country, the absolute numbers of suicides at various ages are of little interest; it is the relative numbers which are significant. The absolute numbers have therefore not been given.

The characteristic difference between the suicidal tendency in males and in females is shewn in the following diagram:—

FREQUENCY OF SUICIDE ACCORDING TO AGE.  
UPPER CURVE, MALES. LOWER CURVE, FEMALES.



EXPLANATION OF GRAPH.—Each horizontal division denotes five years of age, and each vertical division denotes fifty suicides per annum per million of the population of the corresponding sex and age. The upper rectangles denote the observed frequency per annum per million males of each quinquennial age-group, and the lower rectangles denote the observed frequency per annum per million females of each quinquennial group. The two curves denote the probable instantaneous values for any age between the limits 0 to 90, the upper being for the male sex, the lower for the female sex, the ordinates thereto being per million per annum of the corresponding sex.

For males the increase of frequency is almost linear from fifteen to fifty-five years of age. The maximum frequency is about sixty-two, after which the frequency decreases decidedly, but not as quickly as it increases for earlier ages. Italy and Sweden shew a similar decrease of frequency, the maximum being between the ages sixty and seventy, so also do Massachusetts and Buenos Ayres.

It would appear that the measure of the stress of life is special to each country, and that, measured against the capacity to endure this stress, it falls off in Australia at the age of about sixty to sixty-five for men, becoming even at ninety as small as it was at forty-seven for that sex. It also distinctly decreases for the later years of life, for women. It is further worthy of note that the average frequency among Australian women never reaches, at any period of life, the average frequency at the age of twenty-three among men.

There is a well marked seasonal fluctuation of suicide. This fluctuation is perhaps best shewn by computing for a period of years how many persons commit suicide per month, correcting the crude results so as to equalise the months in respect of their duration and total population. The results are:—

## MONTHLY FREQUENCY OF SUICIDE, AUSTRALIA.

Month.	Numbers per 100,000,000 of Population.				Numbers per 10,000 Suicides.			
	N.S.W. and Queensl'd 1890-1899. Persons.	All States of Australia, 1900-1910.			N.S.W. and Queensl'd 1890-1899 Persons.	All States of Australia, 1900-1910.		
		Males.	Females.	Persons.		Males.	Females.	Persons *
January ...	1,163	1,797	357	1,108	859	935	842	920
February ...	1,053	1,636	421	1,057	777	853	994	878
March ...	1,019	1,661	366	1,041	752	866	864	865
April ...	956	1,540	413	1,002	706	803	975	832
May ...	1,072	1,520	352	962	792	792	831	799
June ...	1,002	1,398	265	857	740	729	625	712
July ...	954	1,476	321	922	704	769	758	766
August ...	1,221	1,548	380	990	902	807	897	822
September ...	1,080	1,502	318	936	798	783	751	778
October ...	1,284	1,698	393	1,074	948	885	928	892
November ...	1,227	1,622	307	992	906	845	725	824
December ...	1,512	1,790	343	1,098	1,116	933	810	912
	13,543	19,188	4,236	12,039	10,000	10,000	10,000	10,000

\* For result for 1890 to 1910 see table hereinafter.

There is a distinct seasonal fluctuation; it is, however, apparently not identical from decade to decade, and from the last three columns it is evident that the curve is by no means identical for the sexes. For the purpose of comparison the result for a long series of observations in various European countries, and the corresponding results for Australia for 1890 to 1910, are given. These shew in a general way that the seasonal relationship of the maximum frequency is identical in Australia with that of the Northern Hemisphere, the absolute difference between approximately 6 months.

The Australian figures for the last 21 years are based on two States for the first ten years and on all for the last eleven years. All results are corrected to equalise the months, etc.

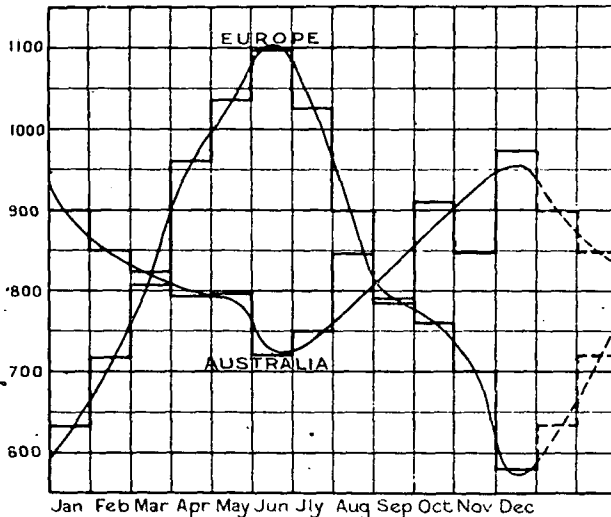
NUMBER OF SUICIDES OCCURRING IN EACH EQUALISED MONTH IN  
10,000 SUICIDES.

	France *	Prussia.	Saxony	Württemberg.		Baden.	Switzerland.	Italy.	Denmark.	Simple Mean.	Australia.†	
	1827 to 1876	1885 to 1900	1875 to 1889	1846 to 1879	1889 to 1893	1881 to 1900	1884 to 1893	1864 to 1876	1896 to 1905			1890 to 1910
January...	690	625	629	547	658	676	637	610	618	632	July ...	749
February...	719	688	696	805	742	664	744	771	629	718	August ...	846
March ...	851	803	817	848	800	864	749	827	713	808	Sept. ...	784
April ...	955	982	987	896	983	903	973	995	964	960	Oct. ...	910
May ...	1,018	1,016	1,040	998	1,009	972	1,025	1,121	1,135	1,037	Nov. ...	848
June ...	1,092	1,053	1,068	1,134	950	1,059	1,078	1,216	1,207	1,097	Dec. ...	973
July ...	1,053	997	1,010	1,063	9-3	991	1,039	1,023	1,072	1,026	Jan. ...	900
August ...	871	907	927	961	892	896	871	868	893	898	Feb. ...	849
Sept. ...	757	836	813	769	833	805	832	714	740	789	March...	832
October ...	744	787	758	742	775	803	810	641	762	758	April ...	793
November	643	692	664	717	867	730	659	610	688	697	May ...	796
December	607	612	571	520	508	637	583	604	579	580	June ...	720
	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000		10,000

\* Computed approximately from results given in Prof. v. Mayr's work (*Op. cit.* p. 262.)

† New South Wales and Queensland only for 1890 to 1899, and all States of Australia from 1900 to 1910 inclusive.

## ANNUAL FLUCTUATION IN THE FREQUENCY OF SUICIDE.



EXPLANATION OF GRAPHS.—The horizontal divisions denote not calendar but equalised months and the vertical divisions denote 50 suicides per month out of an assumed total of 10,000 per annum (833½ per month). The rectangular lines denote the group results for the equalised months on the basis assumed. The upper curve denotes the probable instantaneous values for the whole of Europe, the lower the probable instantaneous values for the whole of Australia. The results are so corrected as to correspond to a population constant throughout the year.

In the diagram the rectangular lines shew the rates for the various months for Australia and Europe generally, and the curves give the most probable form of the fluctuation.

If the monthly mean temperatures of the capital cities of Australia be weighted in proportion to the populations, the resultant mean is as follows:—

Month	...	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Temp. Fahr.	...	71.1	70.7	68.4	63.5	57.7	53.6	51.8	54.1	57.7	61.8	65.6	69.0

These results may be regarded as approximately representing the temperature conditions influencing the rate of suicides owing to the fact that the populations of the cities have a preponderating influence. The frequency of suicide can be expressed by a formula depending on this average temperature.\*

The remarkable correlation between temperature and suicide frequency is best seen by combining the results for pairs of months. In this way we obtain the two upper lines in the following table:—

		Dec. Jan.	Feb. Mar.	April. May.	June. July.	Aug. Sept.	Oct. Nov.
Temperature, Fahr.	...	70.0	69.5	60.6	52.7	55.9	63.7
Suicides per 10,000	...	1,832	1,743	1,631	1,478	1,600	1,716
Calculated	...	1,805	1,796	1,645	1,511	1,565	1,698

\* See Journal Royal Society N.S.W., volume xlv., p. 109. The frequency ( $q$ ) of suicide per million per diem in Australia can be put in the form  

$$q = 0.33 + 0.003 t$$
where  $t$  is the temperature above 62° Fahr.

† This correlation is very approximately expressed by  $615 + 17t$  (where  $t$  is the temperature Fahrenheit), a formula which gives results in the last line.

It may be pointed out that Australia differs very remarkably from Europe in this respect, viz., that the range of temperature throughout the year is decidedly smaller in Australia. Thus a mean for the various countries of Europe gives the range between the averaged hottest and coldest months of the year about 33° Fahr., while for Australia the range is only about 19°, i.e., but little more than half. We thus have:—

Ranges ... ..				In Temperature.	In Suicide Frequency.
In Europe ... ..	...	...	...	33° Fahr.	517
In Australia ... ..	...	...	...	19° ..	253

That is to say, the variation in the suicide frequency on the whole corresponds very closely to the range in temperature, being strongly marked where the temperature differences are strongly marked. It is evident from this that large temperature fluctuations tend to bring about large changes in the frequency of suicide.

7. *Mode of Suicide.* In a relatively small population the number of suicides for individual years by any particular mode of self-destruction is naturally variable, nevertheless there is a greater uniformity than might have been anticipated *a priori*. The statistics have been computed for the years 1907 to 1910 inclusive.

These results shew that the mode of suicide is very regular. The relative frequency of any particular mode is best seen by the number represented by each class in a given aggregate, say, 100, 1000, or 10,000.

**RELATIVE NUMBER PER 10,000 SUICIDES OF EACH SEX, AND OF BOTH SEXES,  
DYING BY PARTICULAR MODES IN AUSTRALIA DURING THE PERIOD 1907 TO 1910.**

Mode.	Males.	Females	Persons.	Mode.	Males.	Females	Persons.
Poisoning ... ..	1,806	4,545	2,280	Precipitation from height ... ..	123	89	117
Asphyxia ... ..	31	...	25	Crushing ... ..	135	147	137
Hanging ... ..	1,707	1,349	1,646	Other modes ... ..	369	293	356
Drowning ... ..	823	2,082	1,041	Total ... ..	10,000	10,000	10,000
Firearms ... ..	3,360	645	2,890				
Cutting, etc. ... ..	1,646	850	1,508				

In Australia poison and drowning are resorted to two and a-half times more frequently by women than by men; suicide by cutting is resorted to twice as often, and by shooting five times as often, by men as by women.

The preceding results may be compared with those of a few other countries. For example:—

**RELATIVE NUMBER OF PERSONS IN 1000 OF EACH SEX RESORTING TO  
PARTICULAR MODES OF SUICIDE.**

Country.	Period.	Hanging.		Drowning.		Shooting.		Poisoning.		Cutting.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Russia ... ..	1904-1908	573	396	122	312	194	32	52	166	?	?
Japan ... ..	1902-1907	623	444	184	430	24	3	27	25	39	27
Servia ... ..	1902-1906	341	619	98	71	415	239	73	9	49	53
Australia ... ..	1907-1910	171	135	82	208	336	64	181	455	165	85

The comparison discloses for each sex the great diversity of frequency in resorting to particular modes of self-destruction. The results are equally diversified when the total number of suicides is considered (irrespective of sex). These total results may be compared with those of a number of other countries for several forms of suicide, viz., by hanging, drowning, shooting, and cutting. The following table furnishes the relative numbers:—

**RELATIVE NUMBER OUT OF A TOTAL OF 1000 SUICIDES DYING BY HANGING,  
DROWNING, SHOOTING, OR CUTTING.**

VARIOUS COUNTRIES.

Country.	Period.	Mode of Suicide.			
		Hanging.	Drowning.	Shooting.	Cutting.
Australia ... ..	1907-1910	165	104	289	151
Austria ... ..	1887-1891	444	259	173	?
Bavaria ... ..	1887-1890	536	203	208	?
Belgium ... ..	1889-1893	492	249	155	19
Denmark ... ..	1896-1900	749	130	54	13
England ... ..	1889-1893	277	227	93	182
France ... ..	1887-1891	435	260	125	24
Italy ... ..	1889-1893	167	232	254	41
Norway ... ..	1888-1890	656	172	78	47
Prussia ... ..	1891-1900	586	184	129	23
Saxony ... ..	1891-1900	598	196	117	20
Sweden ... ..	1889-1893	495	154	140	56
Württemberg ... ..	1890-1899	589	158	152	27

It is remarkable in cases of suicide that what would *a priori* seem to be negligible factors should really have weight. Thus it is shewn that cold acts as a well-defined deterrent in respect of suicide by drowning.

The following conclusions are indicated by the results:—

- (i.) The relative frequency of suicide in Australia is very constant.
- (ii.) There is apparently a secular oscillation of 46 years period and of relatively small amplitude, viz., 15 per cent. The existence of this cannot be decisively determined till another half century has elapsed.
- (iii.) While economic conditions express themselves in the frequency of suicide, their effects are relatively small, and are comparable in magnitude only with the regular annual fluctuation. In a half century's experience the greatest deviations from the mean are - 15 per cent. to + 21 per cent., and from the oscillation of 46 years-period less than 14 per cent. either way.
- (iv.) Australia occupies a medium place in a list of frequency of suicides for all countries.
- (v.) The annual fluctuation in Australia (fluctuation from month to month) is well marked, but is only about half of that in Europe. It ranges between - 14 per cent. to + 10 per cent.



(vi.) In Europe the mean temperature range, between the hottest and coldest months, is about 33° Fahr. and in Australia it is only 19° Fahr., say 57 per cent. of that of Europe; the range of suicide frequency during the year is similarly only about 50 per cent. of that of Europe.

(vii.) The annual fluctuation stands in the same relation to the seasons, *i.e.*, the maximum and minimum frequencies in Europe are in the months June and December respectively, and in Australia in the months December and June.

(viii.) It would appear from this that the annual temperature fluctuation or some unknown phenomenon associated therewith has a profound influence on the frequency of suicide.

(ix.) Suicide is on the increase for the world generally, but the rate of increase is diminishing.

(x.) It may be stated that there is a fairly well marked increase in the frequency of suicide in Prussia for the ages 15 to 25, *viz.*, the intensive educational period of life.

(xi.) In Australia, frequency of suicide at first increases with age, attaining with men a maximum at about age 62, after which it declines. With women it never attains in the western civilised world or in Australia a comparable magnitude to the frequency in the case of men, but exhibits in a less marked way the tendency to increase with age to a limit and then to decline.

(xii.) The western civilised world stands in startling contrast with the east, and especially with India in this respect, where female suicide preponderates. Even in Japan the frequency of female suicides is large compared with any European country.

(xiii.) The mode of suicide shews considerable constancy, and is apparently influenced by physical conditions.

#### § 4. Graphical Representation of Vital Statistics.

1. **General.**—The progressive fluctuations of the numbers representing the total births and marriages are important indexes of the economic conditions and social ideals of a community. For this reason graphs have been prepared (see pages 253 and 254), shewing these fluctuations from 1860 to 1910, both for the States and the Commonwealth. The facts are very significant from the national point of view and call for serious consideration. To properly appreciate the situation it should be remembered that, normally, the increases of births and also of marriages will be similar to the increase of population. Although the marriage curve shews a falling off in marriages after 1891 (see page 254), it shews a recovery in 1894, and, with the exception of a small fall for 1903, it has continually advanced. The same characteristic is not seen in the curve of births, which discloses a recovering tendency only in 1904.

The table on the following page shews the number of births, marriages and deaths which would have been experienced had the rate for 1890 continued, and reveals the significance of the facts disclosed by the curves. It may be remarked that the death rate has greatly improved, and among other countries, Australia stands in a very favourable position in this respect. At the same time the decline in the marriage rate, overtaken once more in 1907, and the still more serious decline in the birth rate, in a country but sparsely populated, have an obvious and most important bearing on the national future, and on questions concerning the extent to which it is desirable to promote immigration.

## ACTUAL BIRTHS, DEATHS, AND MARRIAGES,

EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1910,  
COMPARED WITH THE NUMBER THAT WOULD HAVE OCCURRED IF THE  
RATES OF 1890 HAD REMAINED IN OPERATION.

Year.	BIRTHS.		DEATHS.		MARRIAGES.	
	Actual.	Number of Births that would have been experienced if the 1890 birth rate had been in operation.	Actual.	Number of Deaths that would have been experienced if the 1890 death rate had been in operation.	Actual.	Number of Marriages that would have been experienced if the 1890 marriage rate had been in operation.
1890	108,683		44,449		23,725	
1891	110,187	111,802	47,430	45,737	23,862	24,419
1892	110,158	114,502	42,268	46,842	22,049	25,009
1893	109,322	116,617	45,801	47,707	20,631	25,470
1894	104,660	118,734	42,958	48,573	20,625	25,933
1895	105,084	121,002	43,080	49,501	21,564	26,428
1896	100,134	123,212	45,202	50,405	23,068	26,911
1897	101,137	125,419	43,447	51,308	23,939	27,393
1898	98,845	127,371	51,406	52,106	24,472	27,819
1899	100,638	129,088	47,629	52,809	25,958	28,194
1900	102,221	130,848	44,060	53,529	27,101	28,579
1901	102,945	132,599	46,330	54,245	27,753	28,961
1902	102,776	134,603	48,078	55,065	27,926	29,399
1903	98,443	136,189	47,293	55,714	25,977	29,745
1904	104,113	137,917	43,572	56,420	27,682	30,122
1905	104,941	139,959	43,514	57,256	29,004	30,569
1906	107,890	142,030	44,333	58,103	30,410	31,021
1907	110,347	144,248	45,305	59,011	32,470	31,505
1908	111,545	146,720	46,426	60,022	32,551	32,045
1909	114,071	149,526	44,172	61,170	33,775	32,658
1910	116,801	152,869	45,590	62,537	36,592	33,388

2. *Graphs of Annual Births, Commonwealth and States* (page 253).—A striking feature of the graphs of births is the practically continuous increase in the number of births exhibited in the graph for the Commonwealth from 1860 to 1891, and the marked variations of subsequent years. As the curve clearly shews, a turning point in the number of births occurred in 1891, whilst, as regards the separate States, New South Wales and Tasmania date their decline in number from 1893, Victoria from 1891, and Queensland from 1890. In South Australia the corresponding decline took place as early as 1885, while in Western Australia the increase in number of births has been practically continuous throughout.

It is of special interest to note the decline in births associated with the commercial crisis of 1891-3, and also the decline occurring in 1903, an accompaniment of the severe drought of that period.

In the case of New South Wales the graph crosses that of Victoria in 1879, i.e., the births for that year were sensibly identical in the two States. A fairly continuous increase was experienced in the former State from 1860 to 1893, the only marked fluctuation being a sudden decline in 1889 and an equally rapid recovery in 1890. From 1893 to 1898 a somewhat rapid decline again took place, succeeded by a rise, the continuity of which was broken only by a sharp decline in 1903 and recovery in 1904.

In the case of Victoria the graph shews the increase between 1860 and 1880 to have been comparatively slight, the curve being a gradual rise, with fluctuations more or less marked to 1873, with a subsequent decline. From 1880 to 1891 the increase in the number of births is seen to be very rapid and practically continuous, while from 1891 to 1898 an equally sharp and continuous decline was experienced. A further rise and fall took place between 1898 and 1903, succeeded by a continuous rise from the last-mentioned year to 1907, and a slight fall in 1908, followed by a recovery in 1909.

Starting in 1860 with a lower number of births than any State except Western Australia, the Queensland graph shews that the births increased somewhat rapidly until 1867. The equality in the number of births in Queensland and Tasmania in 1864 is shewn by the Queensland curve crossing the Tasmanian curve at the line for that year. From 1867 to 1882 a continuous though somewhat less rapid increase was experienced, followed by a very rapid rise to 1890, in which year Queensland's maximum number of births was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards the number of births has fluctuated somewhat, but has, on the whole, retained a practically stationary position at a height rather less than that of 1890. The most serious variation was a sudden fall in 1903, the drought year, and rapid recovery in 1904, with a further fall in 1905 and a continuous rise since 1906.

The South Australian graph, a slow but practically continuous rise from 1860 to 1885, exhibits the steady increase in the total number of births. This rise is followed by a slow but fluctuating decline to 1903, and a slight recovery to 1910.

The Tasmanian curve may be regarded as made up of five portions, of which the first, from 1860 to 1877, represents a period of very slight variation, with, on the whole, an increase; the second, from 1877 to 1884, a period of continuous and moderately rapid increase; the third, from 1884 to 1893, a period of rapid increase; the fourth, from 1893 to 1898, a period of continuous but slow decrease; and the fifth, from 1898 onwards, a period of steady recovery.

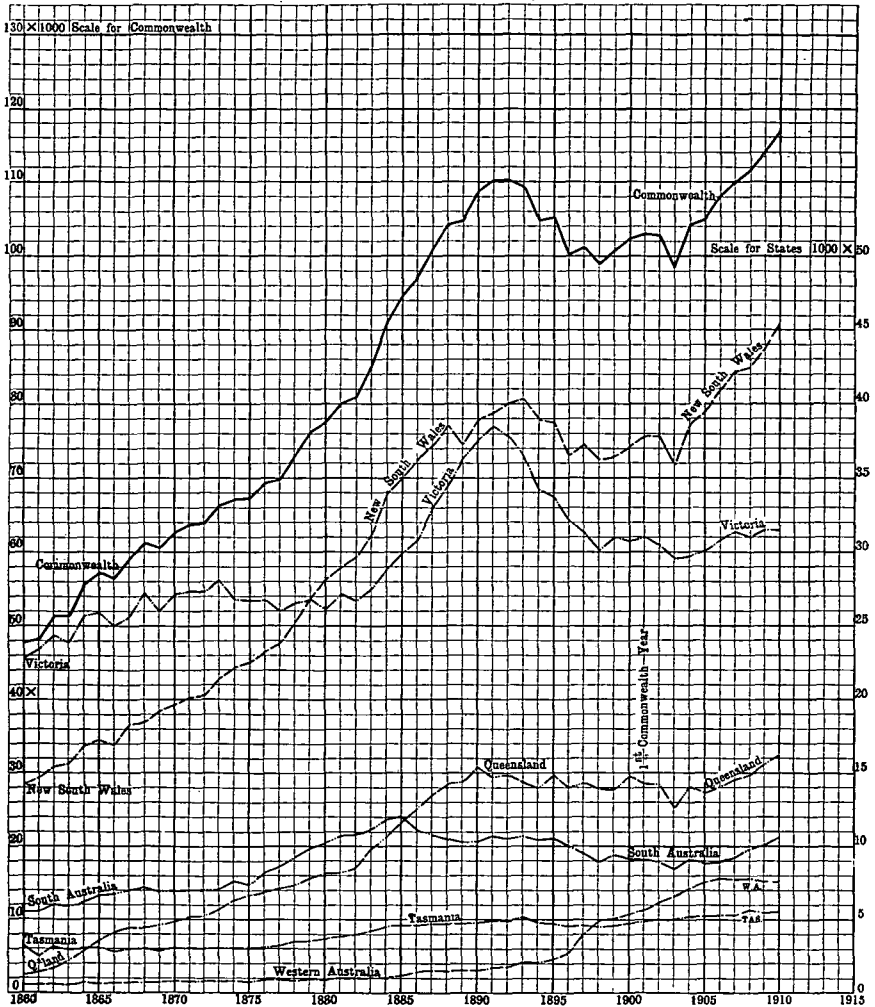
The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1860 to 1884, and that a somewhat quicker rate of increase, experienced from 1884 to 1896, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 onwards.

It will be seen that the years in which the highest points were reached by the several curves are as follows :—

State ...	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Year ...	1910	1891	1910	1885	1906	1908	1910

**3. Graphs of Annual Marriages, Commonwealth and States** (page 254).—The Commonwealth marriage graph from 1860 to 1885 reveals a moderate but somewhat fluctuating increase in the annual number of marriages between 1860 and 1871, a more rapid increase between 1871 and 1879, a still more rapid increase between 1879 and 1885. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in rate. The financial crisis associated with the period subsequent to the latter year was accompanied by a strongly-marked decline in the number of marriages, which reached its lowest point in 1894. From that year onwards a fairly rapid recovery was effected, the record for 1891 being exceeded by that of 1897. This progress was maintained until 1902, when the severe drought of that and the succeeding year were collateral with a rapid fall in the number of marriages. An equally rapid recovery, however, has since taken place, and the number of marriages in the Commonwealth during 1910 was greater than in any preceding year.

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND  
STATES OF AUSTRALIA, 1860-1910.



(See Table page 168.)

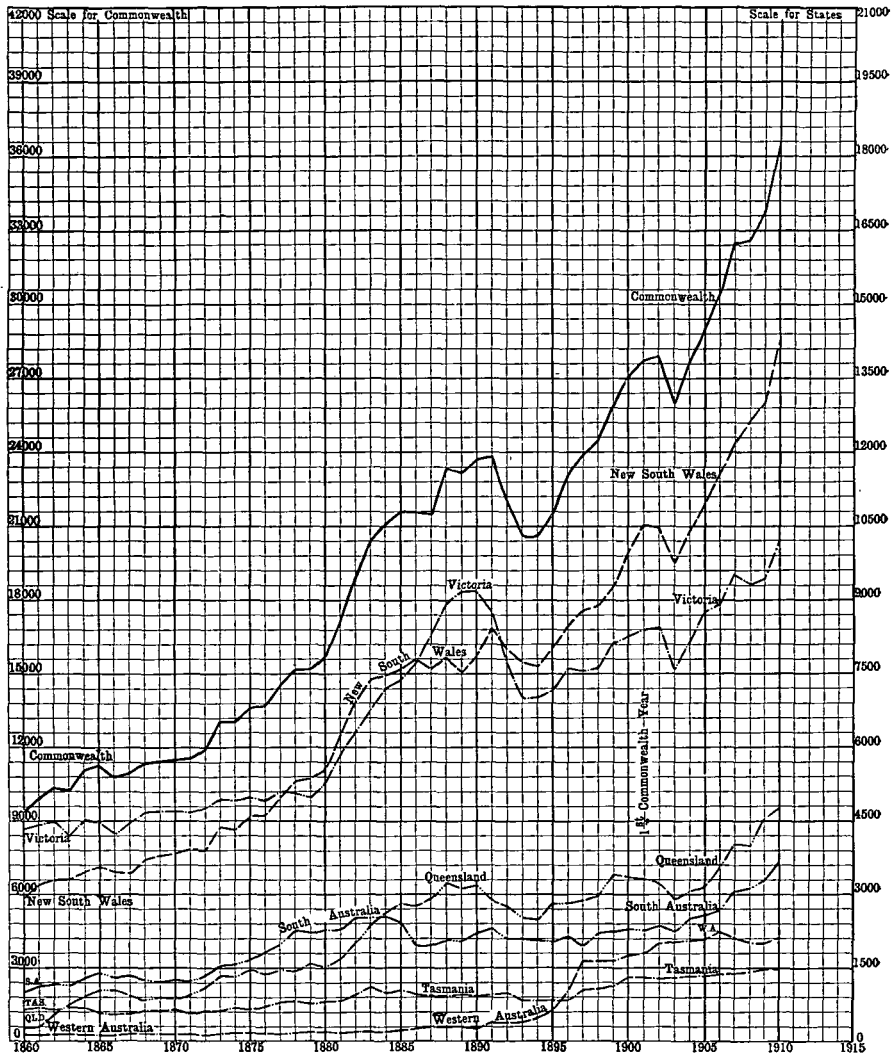
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth, and 1000 for the States.

The scale on the left relates to the Commonwealth, and that on the right to the States.

The distances upwards from the common zero lines of the States and Commonwealth, marked 0, denote the total annual number of births in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the characters of the lines used are as follows:—Commonwealth, —————; New South Wales, - - - - -; Victoria, . . . . .; Queensland, — · — · —; South Australia, — — — — —; Western Australia, — · — · — · — · —; Tasmania, — — — — —.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND  
STATES OF AUSTRALIA, 1860-1910.



(See Table page 180.)

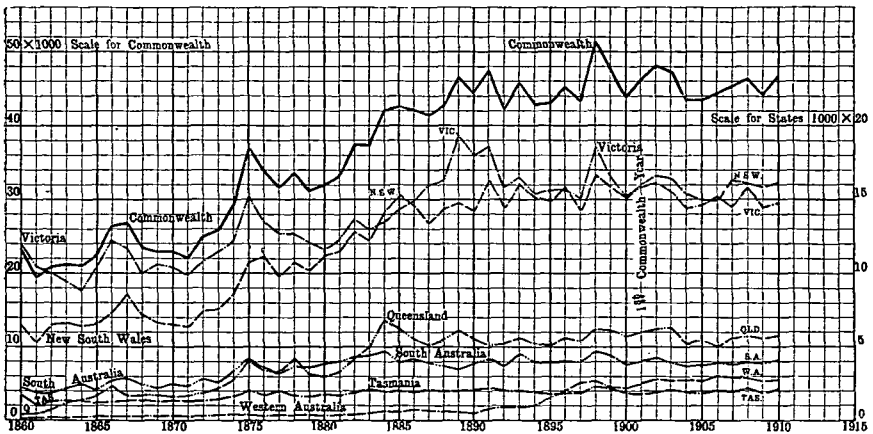
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 600 marriages for the Commonwealth and 300 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the zero line, marked 0, denote the total annual number of marriages in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the lines used are similar to those for births on page 253.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND  
STATES OF AUSTRALIA, 1860-1910.



(See Table page 189.)

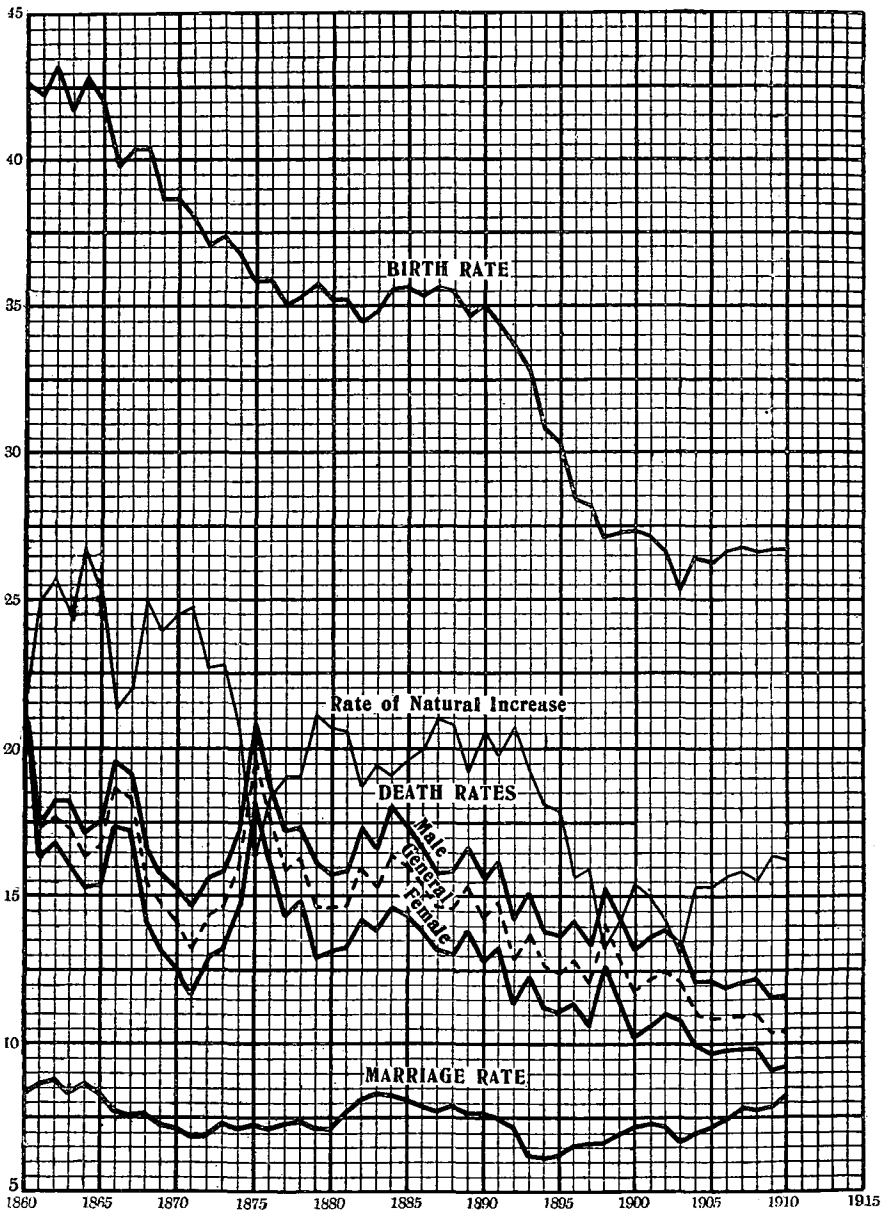
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth and 1000 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the common zero line for States and Commonwealth, marked 0, denote the total annual number of deaths in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the curves refer are written thereon, and the lines used are similar to those for births on page 253.

GRAPHS SHEWING GENERAL BIRTH, NATURAL INCREASE, DEATH (MALE, GENERAL AND FEMALE), AND MARRIAGE RATES IN THE COMMONWEALTH OF AUSTRALIA, 1860-1910.



(See pages 168, 181, 189 and 262.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height, according to the character of the curve, one half per thousand of the population— the basic line being five per thousand of the population.

GRAPHS SHEWING BIRTH RATES IN THE STATES OF NEW SOUTH WALES,  
VICTORIA, AND QUEENSLAND, 1860-1910.

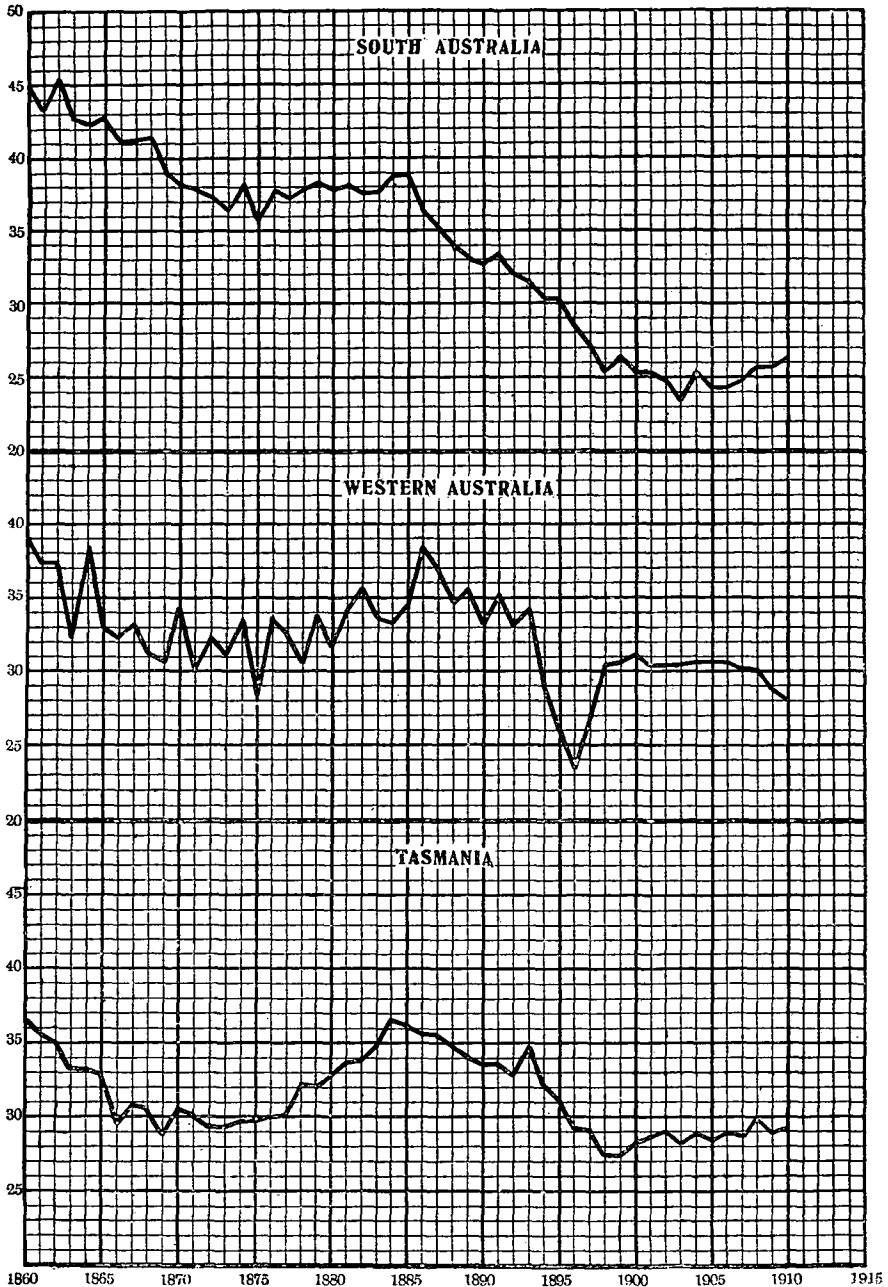


(See Table page 168.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.



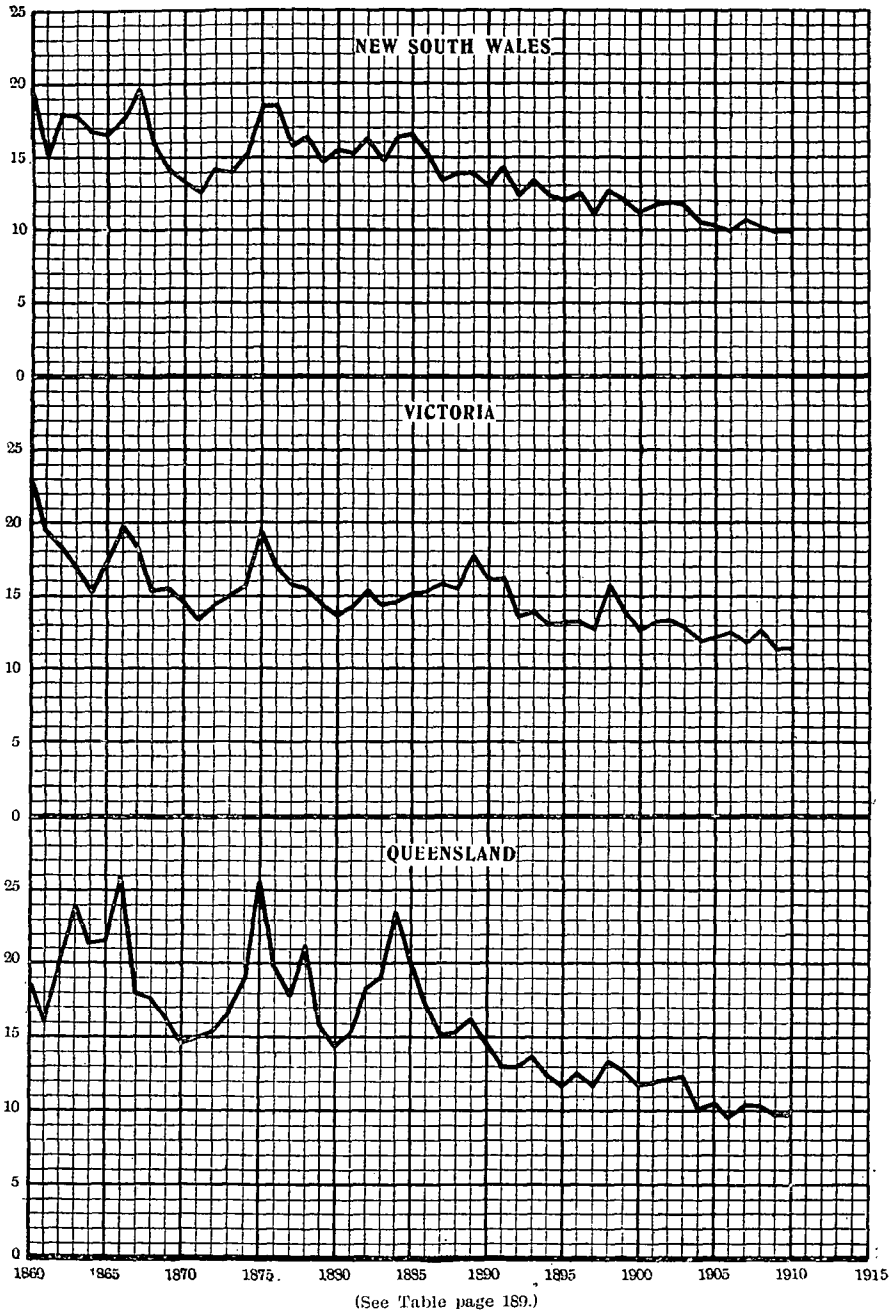
GRAPHS SHEWING BIRTH RATES IN THE STATES OF SOUTH AUSTRALIA,  
WESTERN AUSTRALIA, AND TASMANIA, 1860-1910.



(See Table page 168.)

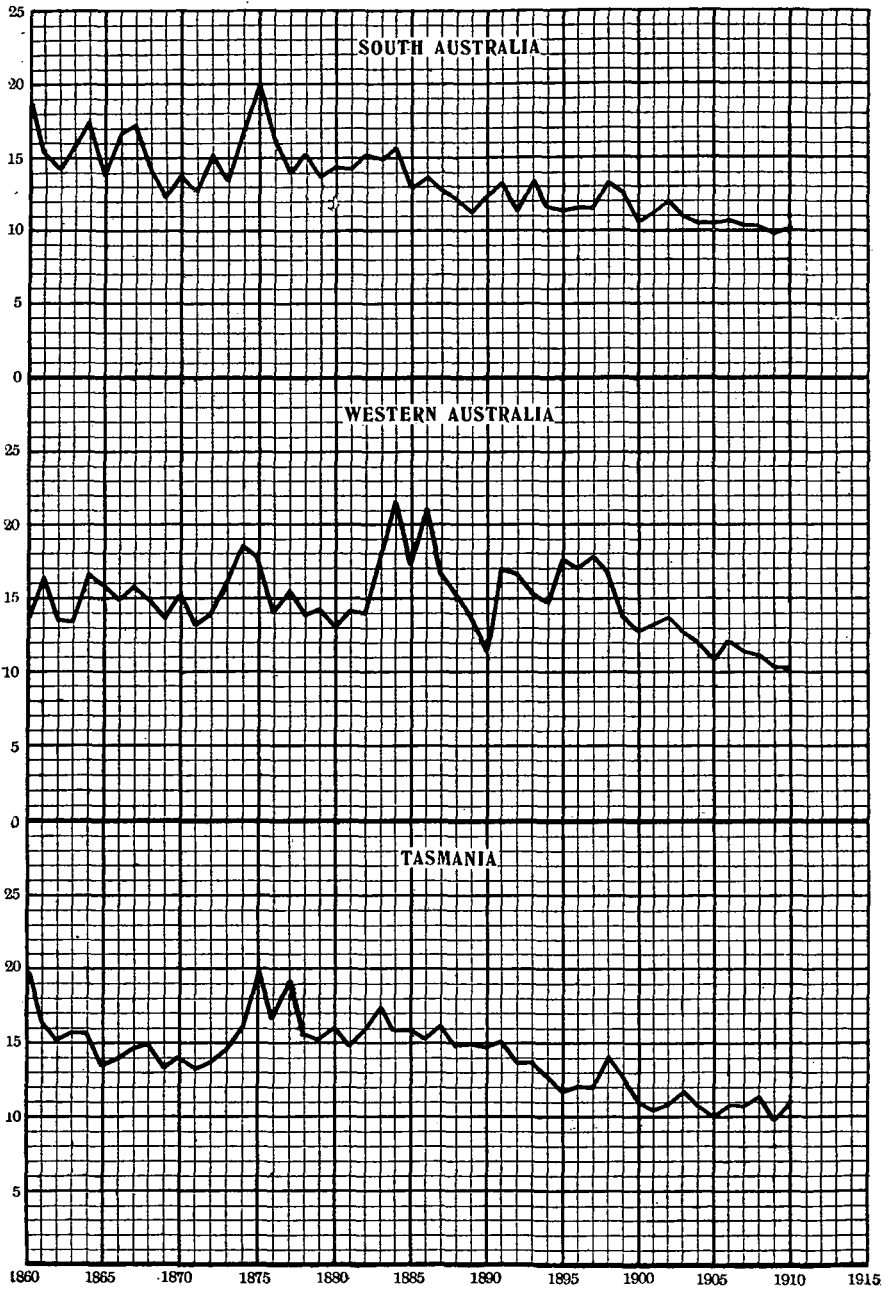
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

GRAPHS SHEWING DEATH RATES IN THE STATES OF NEW SOUTH WALES,  
VICTORIA, AND QUEENSLAND. 1860-1910.



EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shewn by a thickened line

GRAPHS SHEWING DEATH RATES IN THE STATES OF SOUTH AUSTRALIA,  
WESTERN AUSTRALIA, AND TASMANIA, 1860-1910.



EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shewn by a thickened line.

4. **Graphs of Annual Deaths, Commonwealth and States** (page 255).—The curves shewing the progression of the annual number of deaths indicate clearly that the periods for which exceptionally large numbers of deaths occurred were:—(a) 1866-7, (b) 1875-6, (c) 1884-5, (d) 1889-1891, (e) 1893, (f) 1898, and (g) 1902-3. It is remarkable that in each of the periods specified the phenomenon of a relatively high number of deaths was experienced in the majority of the States. Thus, as regards 1866-7, all the States except Western Australia and Tasmania were so affected; in 1875-6 all except Western Australia; in 1884-5 all were affected; in 1889 all except Western Australia and South Australia; in 1891 all except Queensland; whilst in 1893 and 1898, and in 1902-3, all were affected. The fact that the periods of high death rates have been practically identical in the several States furnishes an indication that the excessive mortality has been due to a considerable extent to some common cause operating throughout the Commonwealth.

It may be noted as curious that periods of heavy mortality have occurred at intervals of approximately nine years, viz.:—1866-7, 1875-6, 1884-5, 1893, and 1902-3. There are, however, two marked increases between the third and fourth dates, and one between the fourth and fifth. Thus there is no real indication of the periodicity in the death rate.

Periods in which the number of deaths was exceptionally low are far less clearly defined than those in which the number was high, and the agreement amongst the States is also less complete. The principal periods of low mortality may be said to be 1861, 1869-71, 1879, 1892, 1897, 1900, 1904-5, 1909.

5. **Graphs of Annual Birth, Death, and Marriage Rates and of Rate of Natural Increase—Commonwealth** (page 256).—(i.) *General*. These graphs represent the number of births, deaths, and marriages, and the excess of births over deaths (natural increase) per 1000 of the population of the Commonwealth, for each of the years 1860 to 1910.

(ii.) *Births*. In the case of births, the graph indicates a well marked decline in rate during the period, and represents a fall from 42.56 per 1000 of population in 1860 to 26.73 per 1000 in 1910. This enormous reduction has been subject to small fluctuations during the period under review, but may, on the whole, be said to have been in evidence throughout. There are, however, two periods of arrested decline noticeable, one from 1877 to 1890, and the other from 1898 to the present time. The course of the graph thus indicates a rapid fall from 42.56 in 1860 to 34.99 in 1877, succeeded by a fluctuating but, on the whole, fairly stationary, period to 34.98 in 1890, then a fall even more rapid to 27.15 in 1893, and a further comparatively stationary period to 26.73 in 1910. The lowest point reached, viz., 25.29, was attained in 1903, the year in which the Commonwealth suffered severely from the worst drought it has ever experienced. Since then a small but well defined advance in the birth rate has been in evidence. A declining birth rate is usually due to complex causes, amongst which the variations in the age constitution of the population, and the adoption of preventive measures, are generally considered the most potent.

(iii.) *Deaths*. The three graphs relating to deaths furnish particulars concerning the rates experienced during the period amongst males and females separately, and in the population as a whole, the latter occupying naturally a position between the other two. Throughout the period the rate for males has largely exceeded that for females, but the fluctuations in the two rates have synchronised remarkably, indicating that the conditions which have been responsible for the marked variations which have occurred from time to time have affected males and females alike. On the whole, the graphs furnish clear evidence of a satisfactory decline in the death rate of the Commonwealth, a fall having taken place from 20.86 in 1860 to 10.43 in 1910. The graphical representation of the death rates brings into prominence five years in which the rates were exceptionally high when compared with those of adjacent years. These years are 1860, 1866, 1875, 1884, and 1898. The principal cause of the excessive rate of 1860 was the prevalence in that year of measles, scarlatina, and diphtheria, while the high rates of

1866, 1875, and 1898 were also largely due to epidemics of measles. Prior to 1892, when a rate of 12.91 was experienced, the lowest general death rate for the Commonwealth was that of 1871, viz., 13.24. The highest male death rate for the period was 20.97 in 1860, and the lowest 11.51 in 1909. For females the highest was 20.71 in 1860, and the lowest 9.06 in 1909. The difference between the male and female rates has, since 1869, been fairly constant, and has ranged between 1.97 and 3.44, with a mean value of about 2.7.

(iv.) *Marriages.* In the case of the graph representing marriage rates, the fluctuations are less abrupt than in the case of the birth-rate and death-rate graphs, and the rate for 1910, the final year of the period, viz., 8.37, does not differ very considerably from that of 1860, which was 8.42. The lowest marriage rate for the period was that of 1894, viz., 6.08, marking the culmination of the commercial and financial depression indicated by the declining rates from 1888 onwards. From 1894 to the present time a satisfactory increase has been in evidence, disturbed only by the sharp decline which, in 1903, accompanied the severe drought experienced in the Commonwealth in that year.

(v.) *Natural Increase.* This graph, which represents the excess of births over deaths per 1000 of population, exhibits marked fluctuations arising from the combined fluctuations in birth and death rates. Thus, corresponding to the high death rates of 1860, 1866, 1875, and 1898, there are exceptionally low rates of natural increase, accentuated in the last-mentioned year by a comparatively low birth rate. A combination of low birth rate and comparatively high death rate was also responsible for a very low rate of natural increase in 1903. The highest rate of natural increase for the period was 26.58 in 1864, and the lowest 13.03 in 1898.

**6. Graphs of Annual Birth Rates—States** (pages 257 and 258).—These graphs furnish for the several States information similar to that supplied in the graph on page 256 for the Commonwealth as a whole. It will be seen that in every case the total effect has been an extensive decline in rate, subject to very marked fluctuations. In all the States the period from 1875 to 1885 was one of arrested decline, if not of actual advance, in the birth rate. With the exception of the very low rate accompanying the drought in 1903, the variations in any of the States since 1901 have not been very marked, and in some cases a slight tendency to increase is in evidence.

The highest birth rates during the period were as follows:—New South Wales (1864), 44.00; Victoria (1862), 44.71; Queensland (1860), 47.93; South Australia (1862), 45.44; Western Australia (1860), 38.96; and Tasmania (1884), 36.63. The following were the lowest rates for the period:—New South Wales (1903), 25.44; Victoria (1910), 24.51; Queensland (1903), 24.53; South Australia (1903), 23.65; Western Australia (1896), 23.44; Tasmania (1899), 27.43.

**7. Graphs of Annual Death Rates—States** (pages 259 and 260).—These graphs furnish for the several States similar information to that given for the Commonwealth as a whole in the diagram on page 256, and indicate in each case a satisfactory decline in death rate. It may be noted that an exceptionally high death rate was experienced in all the States in 1875, and that a similar uniformity, though on a smaller scale, is observable for the year 1898, the principal cause in each case having been an epidemic of measles. The highest death rates experienced during the period were as follows:—New South Wales (1867), 19.79; Victoria (1860), 22.77; Queensland (1866), 25.96; South Australia (1875), 19.97; Western Australia (1884), 21.54; and Tasmania (1875), 19.99. The following were the lowest death rates for the period:—New South Wales (1909 and 1910), 9.89; Victoria (1909), 11.45; Queensland (1906), 9.50; South Australia (1909), 9.82; Western Australia (1910), 10.11; and Tasmania (1909), 9.68.

## SECTION VI.

## LAND TENURE AND SETTLEMENT.

## § 1. Introduction and Early History.

1. **Introduction.**—A comprehensive description, in a classified form, of the land tenure systems of the several States has been given in preceding issues of this book; see especially Year Book No. 4. (pp. 235 to 333). The details of that description have been necessarily condensed in the present issue, and for more complete information for past years, reference may therefore be made to Year Book No. 4. The historical matter dealing with the development of land legislation in the individual States may be found in Year Book No. 2 (pp. 263 to 272), and in a more condensed form in Year Books No. 3 (pp. 245 to 254), and No. 4 (pp. 235 to 244).

## § 2. Land Legislation in Individual States.

1. **New South Wales.**—(i.) *Acts now in Force.* The Crown Lands Act of 1884 and the supplementary Act of 1889 were passed chiefly for the purpose of putting an end to speculative selection without *bonâ fide* intention of settlement. Pastoral leases were required to be surrendered to the Crown and divided into two equal parts, one of which was returned to the lessee under a lease with a fixity of tenure for a term of years, the other half the lessee was allowed to hold under an annual occupation license, but this half was always open for selection.

Nevertheless accumulation of land into large estates continued, and settlement proceeded slowly. Entirely new principles of agrarian legislation have been embodied in the Crown Lands Acts 1895 to 1910, the Labour Settlements Act 1902, the Closer Settlement Acts 1904 to 1909, and the Closer Settlement Promotion Act 1910, which, while still giving fixity of tenure to pastoral lessees, retain the principle of free selection before survey, and offer *bonâ fide* settlers special inducements by the introduction of new forms of tenure on easy terms and conditions.

(ii.) *The Western Lands Acts.* All lands in the Western Division of New South Wales are now subject to the special provisions of the Western Lands Acts 1901 to 1909. All leases or occupation licenses could be brought within the provisions of the Western Lands Act by application before the 30th June, 1902. Otherwise the leases or licenses were dealt with by the Board as if the Act had not been passed. All leases issued or

brought under the provisions of the Western Lands Acts expire on the 30th June, 1943, except in cases where part of the land leased is withdrawn for the purpose of sale by auction, or to provide small holdings, in which case an extension of the term of lease of the remainder may be granted, as compensation for the part withdrawn.

2. **Victoria.**—(i.) *Acts now in Force.* The Consolidating Land Act of 1901, amended by the Acts of 1903, 1904, 1905, 1909, and 1910, deals with the whole system of land occupation and alienation in this State. Closer Settlement was provided for by the Land Acts of 1898 and 1901, and amendments until the introduction of the Closer Settlement Act 1904, amended in 1906, 1907, 1909, and 1910. Other special forms of tenure have been provided for by the Settlement on Lands Act 1893, and the Small Improved Holdings Act 1906; these, however, are now embraced in the Land Acts and Closer Settlement Acts respectively.

The Land Act 1910 allows large tracts of land in the counties of Millewa, Croajingolong, and Dargo hitherto reserved for public purposes to be dealt with as unalienated Crown Lands. It is proposed to pass an amending and consolidating Land Act at an early date.

(ii.) *Mallee Lands.* The lands in the Mallee territory comprising an area of about 11,000,000 acres in the north-western district of the State can be cleared at a moderate expenditure. An extension of railway facilities and of successful systems of water supply should bring this territory into greater prominence as a field for agricultural enterprise. More than one-half of this area is unalienated and available for occupation.

Alienation of Mallee lands is now dealt with by a special part of the Land Act of 1901 (see § 6, 3, iii. hereinafter), as amended in 1904, and by the Murray Settlements Act 1907..

3. **Queensland.**—*Acts now in Force.* The Closer Settlement Act 1906 and the Land Act 1910 control the alienation of Crown lands in this State. The latter Act consolidates, amends and simplifies the law relating to the occupation and alienation of Crown lands.

4. **South Australia and Northern Territory.**—(i.) *Acts now in Force.* The Crown Lands Act 1903, amended in 1905 and 1906, repealed and consolidated previous Land Acts, and also repealed the earlier Closer Settlement and Village Settlement Acts. An Act amending the provisions relating to Closer Settlement was passed in 1910. The Pastoral Act 1904 controls the pastoral occupation of lands, and the Irrigation and Reclaimed Lands Acts of 1908, 1909, and 1910 provide for leases of reclaimed lands.

(ii.) *Northern Territory.* During the year 1910 the sale and occupation of Northern Territory lands were regulated by the Northern Territory Crown Lands Act 1890, the Northern Territory Lands Act 1899, and the Northern Territory Tropical Products Act 1904, but since the transfer of the Northern Territory to the Commonwealth on the 1st January, 1911, under the Northern Territory Surrender Act 1907 of South Australia, and the Northern Territory Acceptance Act 1910 of the Commonwealth, the further alienation and occupation of land in the Northern Territory have been suspended, pending a complete reorganisation of the system of land settlement by the Commonwealth Government.

5. **Western Australia.**—*Acts now in Force.* The Land Act 1898 amended, repealed and consolidated previous legislation as to the management of Crown Lands. This Act has in turn been amended in 1899, 1900, 1902, 1904, 1905, 1906, and 1909, and, with its amendments, is now in force. The principle of repurchasing Crown lands for the purposes of closer settlement was introduced by the Agricultural Lands Purchase Acts 1896 to 1904; these Acts were repealed and consolidated by the Agricultural Lands Purchase Act 1909.

6. **Tasmania.**—*Acts now in Force.* The law relating to land tenure and settlement is now consolidated in the Crown Lands Acts 1903, 1905, and 1907; and in the Closer Settlement Acts of 1906, 1907, and 1908.

7. **Administration and Classification of Crown Lands.**—In each of the States of the Commonwealth there is now a Lands Department under the direction of a responsible Cabinet Minister, who is charged generally with the administration of the Acts relating to the alienation, occupation, and management of Crown Lands. The administrative functions of most of the Lands Departments are to some extent decentralised by the division of the States into what are usually termed Land Districts, in each of which there is a Land Office, under the management of a land officer, who deals with applications for selections and other matters generally appertaining to the administration of the Acts within the particular district. In some of the States there is also a Local Land Board or a Commissioner for each district or group of districts.

In most of the States Crown lands are classified according to their situation, the suitability of the soil for particular purposes, and the prevailing climatic and other conditions. The modes of tenure under the Acts, as well as the amount of purchase money or rent and the conditions as to improvements and residence, may vary in each State according to the classification of the land. The administration of certain special Acts relating to Crown lands has in some cases been placed in the hands of a Board under the general supervision of the Minister; for such purposes, for instance, are constituted the Western Lands Board in New South Wales, the Lands Purchase and Management Board in Victoria, and the Closer Settlement Board in Tasmania.

In each of the States there is also a Mines Department, which is empowered under the several Acts relating to mining to grant leases and licenses of Crown lands for mining and auxiliary purposes. Such leases and licenses are more particularly referred to in a later part of this section. (See §.9, hereinafter.)

Full information respecting lands available for settlement or on any matter connected with the selection of holdings may be obtained from the Commonwealth representative in London, from the Lands Departments, or from the Agents-General of the respective States. The administration and classification of Crown lands in each State were more fully dealt with in Year Book No. 2 (pp. 273-6), to which reference may be made.

### § 3. Tenures under which Crown Lands may be Alienated or Occupied.

1. **Introduction.**—The freehold of Crown lands in the several States of the Commonwealth may now ordinarily be alienated either by free grant (in trust for certain specified purposes), by direct sale and purchase (which may be either by agreement or at auction), or by conditional sale and purchase. Crown lands may be occupied in the several States under a variety of forms of leases and licenses, issued both by the Lands and the Mines Departments.

2. **Classification of Tenures.**—The tabular statement given on pages 268-9 shews the several tenures under which Crown lands may be acquired or occupied in each State of the Commonwealth. The several forms of tenure are dealt with individually



in the succeeding parts of this section. In the State of Victoria it is proposed to amend and consolidate the Land Acts at an early date, and to abolish some of the existing forms of tenure. Reference to any amending Acts which are passed up to the latest available date prior to the publication of this book may be found in the Appendix.

(i.) *Free Grants, Reservations, and Dedications.* The modes of alienation given in this category include all free grants either of the fee simple or of leases of Crown lands. "Free" homesteads in Queensland and Western Australia are not included in this class, these tenures being free in the sense that no purchase-money is payable, though the grants are not free from residential and improvement conditions. Reservation and dedication, which are ordinarily conditions precedent to the issue of free grants, are also dealt with herein.

(ii.) *Sales by Auction and Special Sales.* This class of tenure includes all methods by which the freehold of Crown lands may be obtained (exclusive of sales under the Closer Settlement and kindred Acts) for cash or by deferred payments, and in which the only condition for the issue of the grant is the payment of the purchase-money.

(iii.) *Conditional Purchases.* In this class are included all tenures (except tenures under Closer Settlement and kindred Acts) in which the issue of the grant of the fee simple is conditional upon the fulfilment of certain conditions (as to residence or improvements) other than, or in addition to, the condition of the payment of purchase-money.

(iv.) *Leases and Licenses.* This class includes all forms of occupation of Crown lands (other than under Closer Settlement and kindred Acts) for a term of years under leases and licenses issued by the Lands Departments. As the terms indicate, the freehold cannot be obtained under these forms of tenure.

(v.) *Closer Settlement Sales, Leases, and Licenses.* In this division are included all forms of tenure provided for under the various Closer Settlement Acts and also under kindred Acts, such as the Village Settlements and Small Holdings Acts.

(vi.) *Mines Departments' Leases and Licenses.* The tenures here specified include all methods in which Crown lands may be occupied for mining and auxiliary purposes under leases and licenses issued by the Mines Departments in the several States.

**3. Conversion of Tenures.**—It may be seen in later parts of this section that in certain cases provision is made in the Land Acts for the conversion of one form of tenure into another. In this connection an important Act was passed in New South Wales in 1908, viz., the Crown Lands Amendment Act 1908.

(i.) *New South Wales.*—*The Crown Lands Amendment Act 1908.* This Act, which came into force on the 1st February, 1909, contains provisions for the conversion of various forms of tenure.

(a) *Conversion of Homestead Selections or Grants.* Under the amending Act any homestead selection or grant (see page 279) may be converted into (a) a conditional purchase lease, (b) a conditional purchase, or (c) a conditional purchase and conditional lease, but so that the area comprised in such lease does not exceed three times the area

comprised in the conditional purchase. Any application for conversion must be accompanied by a provisional deposit of one shilling per acre of the area of a proposed conditional purchase, as part payment of a deposit of 5 per cent. on the capital value; any balance of the latter deposit must be paid within one month after the applicant has been called upon to do so.

(b) *Conversion of Settlement Leases.* Any settlement lease (see § 7, 2, iii.) may be converted into an original conditional purchase or into an original conditional purchase and a conditional lease if the total area held by an applicant for conversion (exclusive of land under annual tenure) does not exceed an area which, in the opinion of the Board, would be sufficient for the maintenance in average seasons and circumstances of an average family. The area of the lease must not exceed three times the area of the conditional purchase.

If the total area held by an applicant for conversion (exclusive of land under annual tenure) exceeds such area, the conversion must be partly into an original conditional purchase and the balance into a conditional lease. Provision has been made for the conversion of part of the lease into an additional conditional purchase.

(c) *Conversion of Non-residential Conditional Purchases.* A non-residential conditional purchase (see p. 278) may be converted into an original conditional purchase, the term of ten years' residence commencing from the date of application for conversion. The term of compulsory residence is, however, reducible by any period (not exceeding five years) of continuous residence on the land by the holder up to and immediately preceding his application for conversion.

(d) *Conversion of Special Leases and Church and School Lands Leases.* The registered holder of any special lease for the purpose of access to water, agricultural, bee and poultry farming, dairying, dams, drainage, garden, grazing, irrigation, orchard, pig and poultry farm; residence, sugar-cane growing, tanks, tobacco-growing, or water conservation, or of any church or school lands lease, may apply to convert the same or part thereof into (a) a conditional purchase lease, (b) a conditional purchase, (c) a homestead selection, (d) a settlement lease, or (e) a conditional lease. An application for conversion must be accompanied by the prescribed deposit. The application is referred to the Board for inquiry and the Board reports to the Minister as to whether there is any objection to the granting of the application. If the Board recommends the granting of the application, it proceeds to appraise the capital value or price or rent of the land.

(e) *Purchase of Residential Leases.* The holder of any residential lease (see § 7, 2 vi.) may at any time after the first five years of his lease apply to purchase his holding. The application must be accompanied by the prescribed deposit, and is referred to the Secretary for Mines, who, if he concurs therein, reports to the Board, which in turn reports to the Minister. The purchase price is fixed by the Board and must be paid within three months, or within such extended time as the Minister may allow, subject to the payment of interest at 5 per cent.

(f) *Limitation of Transfer.* Conditional purchase leases, conditional purchases, homestead selections, and settlement leases, and subdivisions of the same may not be transferred, except by way of mortgage, to a person who already holds under any tenure (other than annual tenure) an area greater than a "home maintenance area."

(ii.) *Queensland.*—The Land Act 1910 facilitates the conversion of selection tenures from any one mode to any other mode, with the Minister's consent, on terms to be approved by the Land Court.

# **CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.**

New South Wales. <sup>1</sup>	Victoria.	Queensland.
<b>FREE GRANTS, RESERVATIONS, AND DEDICATIONS.</b>		
Free grants in trust Volunteer land grants Reservations and dedications under Land Act 1884 and Mining Act 1906	Free grants in trust and re- servations under Land Act 1901	Free grants in trust Reservations under Land Act 1897 and under State Forests and National Parks Act 1906
<b>SALES BY AUCTION AND SPECIAL SALES.</b>		
Auction sales for cash or on credit After-auction sales Special sales Improvement purchases	Auction sales for cash or on credit Special sales	Auction sales for cash or on credit After-auction sales Special sales Unconditional selections
<b>CONDITIONAL PURCHASES.</b>		
Residential or non-residential conditional purchases Conversion of conditional pur- chase leases Homestead selections	Agricultural allotments, resi- dential or non-residential Grazing allotments, residen- tial or non-residential Selection from grazing area, perpetual or auriferous leases, Selection from pastoral leases Mallee agricultural licenses Murray settlements leases	Agricultural farms Agricultural homesteads Prickly Pear selections Free homesteads
<b>LEASES AND LICENSES.</b>		
Conditional leases Conditional purchase leases Settlement leases Improvement leases Annual leases Residential leases Special leases Snow leases Pastoral leases Scrub leases Inferior lands leases Occupation licenses Western lands leases	Grazing area leases Perpetual leases Mallee leases Licenses of auriferous lands Leases of swamp or reclaimed lands Grazing licenses Leases and licenses for other than pastoral or agricultural purposes State forest and timber re- serve licenses	Grazing farms Grazing homesteads Occupation licenses Special leases Perpetual lease selections Special licenses Pastoral leases
<b>CLOSER SETTLEMENT SALES, LEASES AND LICENSES.</b>		
Sales by auction Closer settlement purchase Annual leases Labour settlements	Special sales Sales by auction Conditional purchase leases Holdings under small Im- proved Holdings Act 1906 Village communities	Sales by auction Agricultural farms Unconditional selections Settlements under Special Agri- cultural Selections Act 1910
<b>MINES DEPARTMENTS, LEASES AND LICENSES.</b>		
Miners' rights Business licenses Authorities to prospect Leases	Mining leases Special licenses Miners' rights Business & residence licenses	Miners' rights Mining leases and licenses Miners' homestead leases

1. See paragraph 4 (p. 270).

# **CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.**

South Australia.	Western Australia.	Tasmania.
<b>FREE GRANTS, RESERVATIONS, AND DEDICATIONS.</b>		
Free grants in trust Reservations and dedications under Crown Lands Act 1903 Artesian leases	Free grants in trust and free leases Reservations under Land Acts 1898 and 1906	Free leases Reservations under Crown Lands Act 1903
<b>SALES BY AUCTION AND SPECIAL SALES.</b>		
Auction sales for cash After-auction sales Sales for special purposes	Auction sales for cash	Auction sales for cash or on credit After-auction sales Special sales of residence or business allotments
<b>CONDITIONAL PURCHASES.</b>		
Agreements to purchase Special agreements under Pin- naroo Railway Act	Conditional purchase, resi- dential or non-residential Conditional purchase by direct payment Conditional purchase of small blocks Free homestead farms Conditional auction sales	Selection of rural lands Homestead areas Selection in mining areas Conditional auction sales
<b>LEASES AND LICENSES.</b>		
Perpetual leases Miscellaneous leases Grazing and cultivation leases Reclaimed swamp leases Special licenses Pastoral leases Leases with right of purchase * Northern Territory agri- cultural, pastoral, right of purchase, perpetual, tropical products, and horse-breeding leases. Northern Territory licenses.	Pastoral leases Timber licenses Special leases Quarrying licenses	Grazing leases Miscellaneous leases Timber licenses Occupation licenses
<b>CLOSER SETTLEMENT SALES, LEASES, AND LICENSES.</b>		
Sales by auction Agreements to purchase Miscellaneous leases Irrigation area leases Village settlements Homestead blocks	Sales by auction Conditional purchases Workingmen's blocks	Special sales Leases with right of purchase
<b>MINES DEPARTMENTS' LEASES AND LICENSES.</b>		
Miners' rights Mining leases Miscellaneous leases Business claims Occupation licenses	Miners' rights Mining leases Miners' homestead leases	Prospectors' licenses Miners' rights Mining leases Miscellaneous licenses

\* See § 2. 4. (ii).

4. **Limitation of Tenures in New South Wales.**—In October, 1910, it was officially stated that it was the policy of the Government to discontinue the granting of the freehold of Crown Lands. Pending the necessary alteration of the law to give effect to that policy, settlement will continue under the provisions of the Crown Lands Acts. In cases where lands are to be classified and where the method of disposal is within the discretion of the Minister for Lands, disposal by way of homestead selection and settlement lease has been adopted for the present.

5. **Tenure of Lands by Aliens.**—In the States of New South Wales, Queensland, South Australia and Tasmania restrictions are imposed upon the tenure of lands by aliens (*i.e.*, persons other than natural-born or naturalised British subjects). In Victoria and Western Australia there are no such restrictions.

(i.) *New South Wales.* Under the Crown Lands Act 1895 (sections 40 and 41), an alien is not qualified to apply for a homestead selection, conditional purchase lease, settlement lease, original homestead lease, or original conditional purchase, unless he has resided in New South Wales for one year, and at the time of making application he lodge a declaration of his intention to become naturalised within five years. If he fail to become naturalised within that period, the land is forfeited.

It is proposed to pass a regulation at an early date giving priority to applicants in ballots for land in the following order :—(a) Members of any of the European races. (b) Persons who are not members of any European race. (c) Coloured people who are aliens.

(ii.) *Victoria.* Under the Aliens Act 1890 (section 3), every alien friend resident in Victoria may acquire, either by grant from the Crown or otherwise, both real and personal property.

(iii.) *Queensland.* Under the Land Act 1891 (section 85.2 and 86B), an alien cannot acquire the freehold of any land in Queensland unless he obtains a certificate that he is able to read and write from dictation words in such language as the Minister for Lands may direct. He must within three years of such acquisition become a naturalised subject. In the Land Bill recently introduced in Parliament these provisions are proposed to be re-enacted, save that the time within which an alien must be naturalised is extended to five years.

(iv.) *South Australia.* In South Australia Asiatics are disqualified from holding perpetual leases of lands in irrigation areas under Section 18 of the Irrigation and Reclaimed Lands Act 1908.

(v.) *Western Australia.* In this State aliens are under no disability as regards the acquisition of the freehold of lands already alienated. Every application to acquire Crown lands, whether by a British subject or an alien, is subject to the approval of the Minister for Lands, with an appeal to the Governor-in-Council.

(vi.) *Tasmania.* Under the Aliens Act 1861 (section 2), aliens cannot hold real estate. An alien, if the subject of a friendly State, may, however, occupy lands for any term not exceeding twenty-one years.

#### 4. Free Grants, Reservations, and Dedications.

1. **Introduction.**—Although free grants of Crown lands were virtually abolished as far back as 1831, the Land Acts of all the States now contain provisions under which the free alienation or occupation of Crown lands for certain specified purposes—comprising generally charitable, educational, and public purposes—is allowed. In all the States, also, Crown lands may be excepted from sale and reserved to the Crown or dedicated for various public and special purposes. Generally reservation and dedication are conditions precedent to the issue of a free grant. In addition to reservations of a permanent nature, temporary reservations are also made, but these are, as a rule, subject to considerable fluctuations in area by reason of withdrawals, renotifications, and fresh reservations.

The following table shews the area for which free grants were issued and the areas permanently reserved or dedicated in each State during each year from 1901 to 1910 inclusive:—

## PARTICULARS OF FREE GRANTS, RESERVATIONS, AND DEDICATIONS, 1901 to 1910.

Year.	N.S.W.	Victoria. §	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
FREE GRANTS.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ...	282	7	425	5	156	10†	885
1902 ...	92	97	3,709	92	1,918	159†	6,067
1903 ...	137	2,153	447	17	519	222†	3,495
1904 ...	633	...	223	13	4,426	570†	5,865
1905 ...	537	126	2,212	37	15	35†	3,012
1906 ...	171	4,622	3,095	7	147	80†	8,122
1907 ...	305	861	943	200	132	6,715†	9,156
1908 ...	1,575	89	463	38	265	110†	2,540
1909 ...	1,334	165	281	28	299	270†	2,377
1910 ...	2,039	103	186	300	280	288†	3,196

## RESERVATIONS AND DEDICATIONS.

1901 ...	1,595	19,278	811,200	*	189,856	4,231	1,026,160†
1902 ...	1,784	81,145	1,456,358	*	209,883	2,611	1,751,781†
1903 ...	463	17,718	3,675,840	*	143,678	1,096	3,838,795†
1904 ...	3,206	9,026	257,195	*	177,779	763	447,969†
1905 ...	1,471	78,525	373,858	*	1,756,073	974	2,210,901†
1906 ...	632	6,711	438,895	*	1,905,504	129	2,351,871†
1907 ...	1,509	1,770	487,766	47,831	406,116	8,113	953,105
1908 ...	1,425	65,883	1,371,259	13,117	664,634	1,302	2,117,620
1909 ...	1,967	34,504	498,515	270,523	394,266	997,213	2,196,988
1910 ...	437	1,575	122,272	6,587	1,985,807	24,825	2,141,503

\* Not available. † Exclusive of South Australia. || Including Northern Territory.

§ Including both permanent and temporary reservations and dedications. ‡ Free leases.

2. **New South Wales.**—Under Sections 104 to 106 of the Crown Lands Act 1884, Crown lands may be reserved or dedicated for certain charitable, educational, and public purposes therein specified. No fresh promises of dedication for religious purposes were made after the 11th May, 1880, on which date a resolution against any further such grants was passed by the Legislative Assembly. During 1909-10, seven free grants of 50 acres each were issued under the Volunteer Force Regulations Act 1867.

(i.) *Reservations.* In addition to the reservations under Sections 104 to 106 of the Act of 1884, referred to above, Crown lands may also be temporarily reserved as sites for cities, towns, or villages under Section 101 of the same Act, and may be reserved for mining purposes under Section 106 of the Mining Act 1906. Crown lands within one mile of any made or projected railway may be temporarily reserved from sale under Section 103 of the Crown Lands Act 1884, and under Sections 112 to 114 of that Act any Crown lands may be reserved from sale for the preservation and growth of timber. Further, under Section 39 of the Crown Lands Act 1889, Crown lands may be reserved by notification in the *Gazette* from being sold or let upon lease or license, in such particular manner as may be specified, or may be reserved from sale or lease generally.

(ii.) *Areas Granted and Reserved, 1910-11.* During the financial year 1910-11, the total area for which free grants were prepared was 2186 acres, including grants of 1579 acres of land resumed under the 12th clause of the Public Roads Act 1902. During the same period 2195 acres were dedicated and permanently reserved, the number of separate dedications being 125.

On the 30th June, 1910, the total area temporarily reserved was 26,636,299 acres, of which 6,278,517 acres were for travelling stock, 6,492,519 acres for forest reserves, 2,973,694 acres for water, 1,269,278 acres for mining, and the remainder for temporary commons, railways, recreation and parks, and miscellaneous purposes.

3. **Victoria.**—Under Section 10 of the Land Act 1901, the Governor is authorised to reserve Crown lands, either temporarily or permanently, from sale, lease or license, for any public purpose whatever.

During the year 1910 eleven free grants, comprising an area of 103 acres, were issued. During the same year reservations of both a permanent and temporary nature, comprising an area of 1575 acres, were made; of this area 828 acres were reserved for recreation grounds.

4. **Queensland.**—Under the Land Act 1910, the Governor in Council may grant in trust, or reserve from sale, or lease, temporarily or permanently, any Crown lands, required for public purposes.

(i.) *Reservations.* Under Section 2 of the State Forests and National Parks Act 1906, the Governor-in-Council may permanently reserve any Crown lands and declare them to be a State Forest or a National Park.

(ii.) *Areas Granted and Reserved, 1910.* During the year 1910 there were forty-two free grants issued for a total area of 186 acres. During the same period reserves covering an area of 112,272 acres were proclaimed, of which 33,610 acres were for timber reserves, 31,286 acres for camping and water, and 10,412 acres for water supply. The total area reserved up to the end of the year 1910 was 13,135,315 acres.

5. **South Australia.**—Under Section 7 (d) of the Crown Lands Act 1903, the Governor is empowered to dedicate by proclamation any Crown lands for various charitable, educational, and public purposes, and may, at any time after dedication, grant the fee simple of such lands to secure the use thereof for the purpose for which they were dedicated.

(i.) *Reservations.* Under Section 7 (f) of the same Act the Governor may by proclamation reserve any Crown lands (a) for the use of aborigines, (b) for the purposes of military defence, (c) for forest or travelling-stock reserves, (d) for public recreation grounds, (e) for railways or tramways, and (f) for park lands.

(ii.) *Artesian Leases.* Under special circumstances free leases of pastoral lands may be granted to discoverers of artesian wells. (See § 8, 5 vi. c.)

(iii.) *Areas Granted and Reserved, 1910.* During the year 1910 there were 18 free grants issued for a total area of 300 acres. During the same year 101 reserves, comprising 6587 acres, were proclaimed.

6. **Western Australia.**—Under Section 39 of the Land Act 1898, as amended by Section 27 of the Act of 1906, the Governor may reserve any Crown lands which may be required for religious, charitable, or public purposes. These reservations may be either temporary or permanent.

During the year 1910, 16 free grants totalling 280 acres were issued, while the area reserved was 1,985,807 acres. Further particulars are not available.

7. **Tasmania.**—Under Section 24 of the Crown Lands Act 1903, the Governor may reserve any Crown lands for the purposes therein specified. The lands are ordinarily leased for a period of ninety-nine years at a peppercorn rental.

During the year 1910 there were 15 free leases, comprising an area of 288 acres issued. During the same period 24,825 acres were reserved, 12,300 acres being reserved for re-forestation purposes, 135 acres for recreation grounds, and 166 acres for other public reserves. The total area permanently reserved to the end of the year 1910 was 1,041,582 acres.

## § 5. Sales by Auction and Special Sales.

1. **Introduction.**—In all the States sales by auction of Crown lands are held from time to time. Notifications of such sales are given in the *Government Gazettes*, together with particulars as to the upset price and conditions of sale. Excepting in the case of South Australia, where land is sold at auction for cash only, the purchase may be either for cash or on credit by deferred payments. In most of the States land may also be purchased by private contract at the upset price, when it has been offered at auction and not sold. In the case of auction sales on credit in the States of Western Australia and Tasmania, certain improvement conditions are imposed, and such sales are therefore classed for the purposes of this article among *Conditional Purchases*. (See § 6 below.) In most of the States comparatively small areas of Crown lands may be sold without competition under special circumstances. Sales by auction and special sales under Closer Settlement Acts are referred to in a later part of this section. (See § 8.)

2. **New South Wales.**—Under the Crown Lands Act 1884 lands not exceeding in the aggregate 200,000 acres for the whole State may be sold by auction during any one year. The sales are notified in the *Gazette* not less than one month before the day of sale. The upset prices may not be less than £8 an acre for town lands; £2 10s. for suburban lands; and other lands fifteen shillings. Town lands may not be sold in areas exceeding half-an-acre; suburban lands in areas exceeding twenty acres; and country lands in areas exceeding 640 acres. A deposit of 25 per cent. on the purchase money must be paid at the sale, and the remainder within three months.

(i.) *Deferred Payment on Auction Sales.* Under the Auction Sales Balances Act 1887 and the Crown Lands Amendment Act 1903 special terms of payment may be made on auction sales of land subdivided into areas not exceeding forty acres. The time for deferred payments may not exceed five years and the instalments carry interest at five per cent. per annum. A cash deposit of 25 per cent. on the purchase money must be paid.

(ii.) *After-auction Sales.* Under the Crown Lands Amendments Acts 1895 and 1903, lands which have been offered for sale at auction and not sold may be granted at the upset price to any person applying. A deposit of 25 per cent. on the upset price must be paid, and the remainder according to the terms on which the land was offered at auction.

(iii.) *Special Sales without Competition.* Under the Crown Lands Act 1884 the Governor is authorised to rescind the reservation of water frontage, or of land adjoining such frontage, contained in any Crown grant, and to sell the land, the subject of such rescission, at a fair price not less than the upset price, to the owner of the land contained in the grant. Crown lands may be sold to the owners of adjacent lands in a similar manner in the following cases:—(a) Where there is no way of access attainable, (b) where the lands comprised are insufficient in area for conditional sale, (c) where the lands are situated between granted land and a road which should form the way of approach to such granted land, (d) where the lands are encroached upon by buildings erected on granted land, and (e) where lands have been reclaimed with the authority of the Governor from below high-water mark.

(iv.) *Improvement Purchases.* Only lands within proclaimed goldfields are available for improvement purchases. The areas which may be acquired in this manner may not exceed one-quarter of an acre within the boundaries of a town or village, or two acres of land outside such boundaries. The price must not be less than £8 per acre for town lands, and £2 10s. for suburban or other lands. The applicant must be in authorised occupation under the Mining Act of the land he applies for, and must be the owner of the improvements thereon; such improvements must be of value equal to the respective minimum rates above-mentioned.



(v.) *Alienation by Auction and Special Sales.* During the year ended the 30th June, 1911, the area of Crown lands sold by auction and special sales for which grants were prepared amounted to 10,911 acres, of which 6311 acres were sold by auction in 1341 lots; 2826 were sold by after-auction sales in 1029 lots: 88 acres were sold as improvement purchases in 171 lots; and 1686 acres were sold as special purchases in 172 lots. The following table gives particulars of Crown lands alienated by auction and special sales during each year from 1901 to 1910:—

**NEW SOUTH WALES.—AUCTION AND SPECIAL SALES, 1901 to 1910.**

Year.	Auction and After-auction Sales.	Improvement Purchases.	Special Sales.	Total.	
				Area.	Price.
	Acres.	Acres.	Acres.	Acres.	£
1901 ...	49,074	43	445	49,562	116,562
1902 ...	50,110	801	1,022	51,933	115,625
1903 ...	40,610	23	576	41,209	117,879
1904 ...	53,556	23	1,185	54,764	120,946
1905 <sup>1</sup> ...	22,390 <sup>3</sup>	6	129	22,525	99,246
1906 <sup>2</sup> ...	22,774 <sup>3</sup>	36	2,616	25,426	86,802
1907 <sup>2</sup> ...	25,327 <sup>3</sup>	57	1,131	26,515	132,127
1908 <sup>2</sup> ...	13,995 <sup>3</sup>	34	712	14,741	94,928
1909 <sup>2</sup> ...	11,745 <sup>3</sup>	48	1,229	13,022	98,763
1910 <sup>2</sup> ...	7,980 <sup>4</sup>	86	1,109	9,175	91,374

1. Half-year ended 30th June. 2. Year ended 30th June. 3. Including land sold under the Centennial Park Sale Act. 4. Exclusive of 3,423 feet frontage sold for £15,005 under the Centennial Park Sale Act.

The total areas alienated by auction and other forms of sale up to the 30th June, 1910, are shewn hereinafter. (See § 11.)

3. **Victoria.**—Lands specially classed for sale by auction, and any land in any city, town, or borough, may be sold by auction in fee simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at any higher price determined. The purchaser must pay the survey charge at the time of the sale, together with a deposit of 12½ per cent. of the whole price; the residue is payable in equal half-yearly instalments not exceeding forty in number, according to the amount, with interest at the rate of 4 per cent. per annum.

(i.) *Special Sales without Competition.* Detached strips of land not exceeding twenty acres may be sold at a valuation to the owner of the adjoining freehold in cases somewhat similar to those specified above in respect to Crown lands in New South Wales.

(ii.) *Areas Sold at Auction and by Special Sales, 1901 to 1910.* The following table gives particulars of auction sales and special sales for the year 1901 and from 1905 to 1910:—

**VICTORIA.—AUCTION AND SPECIAL SALES, 1901 to 1910.**

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.	1910.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Country lands ...	4,079	3,267	2,060	2,776	2,805	2,729	2,469
Town and suburban lands ...	2,127	2,129	1,946	1,369	1,630	2,062	1,789
Special sales ...	846	3,382	2,636	2,168	2,117	2,602	1,537
Total ...	7,052	8,778	6,642	6,313	6,552	7,393	5,795

Particulars of total areas alienated are given hereafter. (See § 11.)

4. **Queensland.**—The Minister may, with the approval of the Governor-in-Council, cause any Crown lands to be offered for sale by auction. The notification must specify the amount of deposit, and the term for payment of the balance of the money, which term may not exceed ten years. The upset price may not be less than £8 per acre for town lands, £2 per acre for suburban lands, and 10s. per acre for country lands.

(i.) *After-auction Sales.* The proclamation of lands for sale by auction declares that any lands therein mentioned, which have been offered at auction, but not sold or withdrawn, shall be open to purchase at the upset price by the first applicant. The price may be paid in the same instalments and at the same periods as if the land had been bought at the auction.

(ii.) *Special Sales without Competition.* Land may be sold without competition to the holder or holders of adjoining lands at a price to be determined by the Land Court, under circumstances similar to those specified above in the case of New South Wales. When the holder of any land proves that, owing to danger from floods or other reasons, it is unsafe to reside on his holding, he may be granted, on payment of a price determined by the Land Court, an area not exceeding ten acres out of the nearest convenient and available Crown lands.

(iii.) *Areas Sold at Auction, after Auction, and by Special Sales, 1901 to 1910.* The following table shews the areas sold at or after auction, and by special sales, during the year 1901 and from 1905 to 1910:—

**QUEENSLAND.—AUCTION AND SPECIAL SALES, 1901 to 1910.**

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.	1910.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Town ...	334	128	340	285	472	227	464
Suburban ...	793	363	706	364	621	340	1,175
Country—							
Ordinary sales ...	52,132	157,839	15,481	11,556	7,585	12,844	8,939
Special sales ...	...	1,659	...	3,716	...	...	...
Total ...	53,259	159,989	16,527	15,921	8,678	13,411	10,578

Particulars as to the total areas alienated by all forms of purchase up to the end of each year from 1901 to 1910 are given in a later part of this section. (See § 11 herein.)

(iv.) *Unconditional Selections.* This form of tenure is similar to that of a sale by auction with deferred payment. The minimum price for the land is 13s. 4d. an acre, payable in twenty annual instalments, and the maximum area granted to the applicant is 1,280 acres. A deed of grant may be obtained upon payment of the purchase money.

The following table shews the number and area of unconditional selections for which applications were accepted during the year 1901 and from 1905 to 1910:—

**QUEENSLAND.—UNCONDITIONAL SELECTIONS, 1901 to 1910.**

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.	1910.
Number ...	151	90	130	91	126	131	98
Area ... Acres	24,322	10,586	25,262	25,382	22,770	27,395	15,930
Rent ... £	1,180	481	1,113	1,042	1,073	1,111	685

5. **South Australia.**—The following lands may be sold by auction for cash :—(a) Special blocks. Any single section of Crown lands which may be surrounded by lands sold or contracted to be sold, and any section (not exceeding 100 acres in area) which may be required for the establishment of any industry. (b) Crown lands which have been offered for perpetual lease, and not taken up for two years. (c) Town lands. (d) Suburban lands. The upset price is determined by the Commissioner, and 20 per cent. of the purchase-money must be deposited at the time of sale, and the residue paid within such a time as the Commissioner may allow.

(i.) *After-auction Sales.* All Crown lands, except town or suburban lands, offered at auction and not sold remain open for leasing or sale under agreement or may be sold by private contract for cash at the upset price.

(ii.) *Sales for Special Purposes.* The Governor may, on the application of the purchaser or lessee under any of the Crown Lands Acts, grant 2 acres of the land comprised in such agreement or lease to trustees, to be used for any public or charitable purposes, or he may grant not over one acre of land, comprised in such agreement, as a site for a shop, mill, or post office. The purchase-money for such land must be paid at the time of application.

(iii.) *Areas Sold for Cash, 1901 to 1910.* The following table shews the areas sold for cash during the year 1901 and from 1905 to 1910. The total areas sold under all types of sale at the end of the year 1901 and from 1905 to 1910 are shewn in a later part of this section. (See § 11.)

**SOUTH AUSTRALIA.—AUCTION AND SPECIAL SALES, 1901 to 1910.**

Year ... ..	1901.	1905.	1906.	1907.	1908.	1909.	1910.
Area in acres ...	11,314	77,022	69,060	70,349	78,557	128,529	386,977

6. **Western Australia.**—Surveyed town lots notified in the *Gazette* as open for sale, may be sold by public auction at a prescribed upset price. Any person may apply to the Minister to put up for sale by auction any lot already surveyed on depositing 10 per cent. of the upset price. The balance of the purchase-money, and the value of the improvements, if any, must ordinarily be paid in four equal quarterly instalments. In the case of suburban lands, the purchaser must carry out certain improvements, which are more particularly referred to below. (See § 6, *Conditional Purchases*, 6, vii.)

(i.) *Areas Sold by Auction, 1901 to 1911.* The following table shews the areas of town and suburban lands sold at auction during the year 1901 and from 1906 to 1911 :—

**WESTERN AUSTRALIA.—AUCTION SALES, 1901 to 1911.**

Year ... ..	1901.	1906. <sup>1</sup>	1907. <sup>1</sup>	1908. <sup>1</sup>	1909. <sup>1</sup>	1910. <sup>1</sup>	1911. <sup>1</sup>
Area sold ... Acres	856	1,109	1,895	2,258	2,160	1,643	1,848
Number of Allotments	1,366	935	995	1,090	879	783	778

1. For the year ended 30th June,

Particulars as to total areas alienated are given in a later part of this section. (See § 11.)

7. **Tasmania.**—Any town lands may be sold at auction or by private contract, either for cash or on credit, provided that no such lands may be sold on credit if the price is less than £15. Rural lands may also be sold at auction or by private contract, but lots of

first-class land may not be sold on credit if less than fifteen acres in area. In the case of sales on credit both of town and rural lands, improvement conditions are imposed, and such sales are therefore classified for the purposes of this article as *Conditional Purchases*. (See § 6.)

(i.) *After-auction Sales*. All rural lands and town lands, not within five miles of any city, which have been offered at auction and not sold, may be purchased by private contract at the upset price, and subject to the conditions on which they were offered at auction.

(ii.) *Sale of Land in Mining Towns*. The holder of a residence or business license, who is in occupation and is the owner of buildings and improvements upon the area licensed of a value equal to the upset price of such area, is entitled to purchase not more than half an acre in area. The areas may be sold on credit.

(iii.) *Areas Sold for Cash, 1901 to 1910*. The following table shews the areas sold for cash during the year 1901 and from 1905 to 1910:—

**TASMANIA.—AUCTION AND SPECIAL SALES, 1901 to 1910.**

Year	...	...	...	1901.	1905.	1906.	1907.	1908.	1909.	1910.
Area in acres	...	...	...	1,915	404	463	504	603	1,026	55

Particulars of total areas alienated are given in a later part of this section. (See § 11.)

## § 6. Conditional Purchases.

1. **Introduction.**—In all the States of the Commonwealth the freehold of the land may be acquired under what are known as systems of conditional purchase by deferred payments of half-yearly or yearly instalments. Certain conditions, generally as to residence and improvements, have to be complied with before the freehold is granted, but these conditions are usually of a light nature and are inserted chiefly with the object of guaranteeing that the occupier will become of benefit to the community by making a reasonable effort to render his holding wealth-producing. Though there is a considerable similarity between some of the forms of tenure in the several States, the terms and conditions vary greatly in detail. As a rule a lease or license for a certain period is first issued to the selector, and upon fulfilment of the prescribed conditions and payment of the full amount of purchase-money the freehold is conveyed to him. In Queensland and Western Australia "free" homesteads may be acquired. Although under these tenures no purchase-money is payable, the grant is conditional on the performance of residential and improvement conditions; these tenures are therefore included here with conditional purchases rather than with free grants.

2. **New South Wales.**—The following are the methods by which land may be alienated by conditional purchase:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conversion of conditional purchase; and (iv.) homestead selections.

(i.) *Residential Conditional Purchase*. Any vacant Crown lands in the "Eastern Division" and "Central Division," and certain proclaimed areas in the "Western Division" are available for conditional purchase. An applicant must be not less than sixteen years of age, and must pay on application both the prescribed deposit and a survey fee according to a fixed scale. The area which may be selected depends upon the division in which the land is situated, and ranges from 40 to 2,560 acres. The price is ordinarily £1 per acre. After three years the purchaser may pay an instalment equal to 5 per cent.

on the price of the land, and thereafter annually a similar amount. These instalments include  $2\frac{1}{2}$  per cent. interest on the outstanding balance of the purchase money. The holding must be fenced within three years and improved to the value of ten shillings an acre (but not exceeding 50 per cent. of the price of the land) at the end of the first five years. Residential conditions, which for sufficient reason may be suspended, are imposed. A certificate which permits transference of the holding will be issued at the expiration of five years if the required conditions have been fulfilled.

The holder of a conditional purchase may obtain an additional conditional purchase the area of which, together with that of the original holding, must not exceed the prescribed maximum unless in the opinion of the Board such area is insufficient for the maintenance of a home.

(ii.) *Non-residential Conditional Purchase.*—The maximum area granted for a non-residential conditional purchase is 320 acres, and the minimum 40 acres. The price, deposit and annual instalments are double those required under residential conditions, and the improvement conditions are more stringent. A non-residential conditional purchase may be converted into an original conditional purchase (see p. 267 *ante*).

(iii.) *Conversion of Conditional Purchase Leases.* Under the Crown Lands Amendment Act 1905, a conditional purchase lease, for which the term is forty years, carries with it a right of conversion into a conditional purchase at any time during its currency, and ultimately into a freehold. These leases are more particularly referred to below. (See § 7, *Leases and Licenses*).

(iv.) *Applications Made and Confirmed and Deeds Issued, 1901 to 1911.* During the year ended the 30th June, 1911, deeds of grant were prepared on the completion of conditional purchases for 632,737 acres, making the total number of conditional purchases in existence at the end of the financial year 93,408 for a total area of 15,614,036 acres. The following table gives particulars of conditional purchases for each year from 1901 to 1911 :—

#### NEW SOUTH WALES.—CONDITIONAL PURCHASES, 1901 to 1911.

Year.	Applications Made.		Applications Confirmed.		Areas for which Deeds have been Issued.	
	Number.	Area.	Number.	Area.	During the Year.*	To end of Year.
		Acres.		Acres.	Acres.	Acres.
1862-1900 ...	254,303	34,672,319	46,449	8,169,874	...	3,711,635
1901 ...	2,277	549,898	1,555	360,910	500,554	4,212,189
1902 ...	2,340	400,710	1,691	360,235	1,005,391	5,217,580
1903 ...	2,113	332,886	1,823	297,267	792,449	6,010,029
1904 ...	2,922	528,102	1,793	285,930	959,596	6,969,625
1905 <sup>1</sup> ...	1,456	245,468	1,013	161,701	584,827	7,554,452
1906 <sup>2</sup> ...	3,123	496,781	2,088	343,832	1,448,109	9,002,561
1907 <sup>2</sup> ...	3,723	685,795	2,639	443,679	1,261,660	10,264,221
1908 <sup>2</sup> ...	3,850	734,125	2,961	580,209	1,395,648	11,659,869
1909 <sup>2</sup> ...	4,541	1,105,307	3,325	803,354	1,188,297	12,848,166
1910 <sup>2</sup> ...	2,264	342,367	1,984	294,897	1,079,837	13,928,053
1911 <sup>2</sup> ...	1,602	221,537	1,613	227,520	632,738	15,614,036
Total ...	284,514	40,315,295	68,934	12,329,408	10,849,155 <sup>3</sup>	15,614,036

1. Half-year ended 30th June. 2. Year ended 30th June. 3. From 1901 to 1911 inclusive.  
4. Exclusive of exchanges under the Crown Lands Act 1895.

Further particulars as to the total areas alienated and in process of alienation are given hereinafter. (See § 11.)

(v.) *Homestead Selection.* Under the Act of 1895 suitable land may be classified for homestead selection. Good agricultural lands are divided into blocks, with maximum area of 1280 acres, and suitable lands for business people within easy access to towns may be provided. Conditions as to area of blocks, capital value, etc., are published in the *Gazette*. After five years' continuous residence a grant will be issued; thereafter a residence for at least seven months in the year will be necessary. The rent for the first six years will be  $1\frac{1}{2}$  per cent. of the capital value of the land, and thereafter  $2\frac{1}{2}$  per cent. of the capital value. Should an area granted under this tenure be found to be insufficient for the maintenance of a home, it may be increased to a home maintenance area by additional homestead selection. Conditional purchases may be converted into homestead selections and vice versa.

During the year ended 30th June 1910, there were 183 original and 85 additional homestead selections applied for, comprising an area of 79,787 acres. During the same period the total number of applications confirmed was 265, comprising 76,003 acres, 1764 homestead selections comprising an area of 622,903 acres were in existence on the 30th June 1910, and up to the same date 4,028 homestead grants of 1,628,176 acres had been issued. Further particulars for previous years are given in a later part of this section. (See § 11.)

3. *Victoria.*—The freehold of agricultural and grazing lands may be acquired by conditional purchase under the following tenures:—(i.) Agricultural allotments and grazing allotments; (ii.) Agricultural and grazing allotments by selection from grazing area or perpetual leases; (iii.) Mallee agricultural licenses; (iv.) Murray settlements leases; and (v.) swamp or reclaimed lands purchase leases. Numbers (i.), (ii.) and (iii.) may be either on residential or on non-residential conditions. It is proposed to make various important alterations at an early date in the land laws of Victoria. Particulars of any Acts which are passed up to the latest available date prior to the publication of this book may be found in the Appendix.

(i.) *Agricultural Allotments and Grazing Allotments.* An agricultural allotment is an area not exceeding 200 acres of first-class lands or 320 acres of second-class lands, and a grazing allotment is an area not exceeding 640 acres of third-class lands, which may for 20s., 15s., and 10s. an acre for the first, second and third-class lands respectively, be paid for in twenty or forty years. The applicant must be over 18 years of age, and must not already be in possession of a selection under the Land Acts.

Agricultural allotments and grazing allotments may be granted under either (a) residential or (b) non-residential licenses.

(a) *Residential Licenses* are granted for six years at a fee, according to the valuation of the land, of not less than sixpence per acre per annum. The licensee may not transfer, assign, or sublet this allotment. The licenses are granted subject to conditions as to residence, improvements, fencing, and destruction of vermin. During the term of license improvements equal in value to the minimum price of the land must be effected. Upon satisfying the Board that all conditions of the license have been fulfilled, the licensee is entitled after six years to obtain a grant upon payment of the balance of the purchase-money; or otherwise he may obtain a lease of the allotment for a term of fourteen years at the same rental as the fee paid under license. During the currency of the lease a grant in fee of the lands leased may be obtained upon payment of the difference between the amount actually paid and the purchasing price of the land.

Residential licenses are also granted, subject to the same covenants and conditions as stated above, but varied with regard to the term and to the amount of the fee and rent reserved, being double the term at half the yearly payment.

(b) *Non-residential Licenses* for both agricultural and grazing allotments may be issued on conditions similar to the above, with the exception that the term of the lease granted after the license period must be on the fourteen years basis only.

(ii.) *Agricultural and Grazing Allotments by Selection from Grazing Areas and Perpetual Leases or Auriferous Lands Licences.* The lessee of a grazing area may select thereout, under residential conditions (see 3 (i.) above), and if the residence and improvement conditions necessary under an agricultural or grazing allotment license have already been complied with, the license may be antedated any period, not exceeding 6 years, upon payment of the difference in the rent for such period, and a grant may, therefore, be obtained immediately. The lessee of a grazing area may, if preferred, select thereout under non-residential conditions (see 3 (i.) (b) above). Grazing area-leases are more particularly referred to below, under the heading of *Leases*. (See § 7, 3 i.) Either residential or non-residential, agricultural or grazing allotments may also be selected under certain circumstances out of areas held under perpetual leases (see § 7, 3, ii.) below or auriferous lands licenses. (See § 7, 3, iv.)

(iii.) *Mallee Agricultural Licences.* These licenses are issued for first, second, and third-class Mallee lands, the maximum areas being 640, 1000 and 1280 acres of first, second and third-class land respectively. The licenses are for six years, and are issued subject to similar conditions (both residential and non-residential) as agricultural allotments. (See above.)

(iv.) *Murray Settlements Leases.* Under the Murray Settlements Act 1907, any Crown lands within the Mallee country or Mallee border may be subdivided into either (a) *Homestead Allotments* near the river Murray, each containing an area of not more than fifty acres, or (b) *Mallee farm allotments*, situated more or less remotely from the homestead allotments, and each containing an area not exceeding 640, 1000, 1280, or 1600 acres of first, second, third, or fourth class land respectively. Payment of the value of a holding, with interest at not less than  $4\frac{1}{2}$  per cent. per annum, must be made in sixty-three half-yearly instalments, and the prescribed improvements must be carried out. Part II. of the Act provides for the construction and maintenance of irrigation works and gives power to constitute irrigation areas. Two settlement areas have been laid out under the Act with due regard to irrigation conditions, viz., those at White Cliffs and Nyah, and at the former place a dry farm area has also been subdivided. At White Cliffs 6273 acres were subdivided as homestead allotments, and 50,345 acres as dry farm allotments, while at Nyah 1960 acres were subdivided as homestead allotments. At the commencement of the year 1911, there were 256 irrigation allotments held under the Act, covering an area of 9527 acres.

(v.) *Swamp or Reclaimed Lands Purchase Leases.* The special conditions attached to conditional purchase leases of swamp or reclaimed lands are referred to below. (See § 7, 3 v.)

(vi.) *Area Selected Conditionally and Area Sold, 1901 to 1910.* The subjoined table gives particulars shewing the areas selected conditionally during the year 1901 and from 1905 to 1910. A large proportion of the areas shewn has reverted to the Crown in consequence of non-fulfilment of conditions.

#### VICTORIA.—AREAS PURCHASED CONDITIONALLY, 1901 to 1910.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.	1910.
	Acres	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
With residence ...	466,155	189,442	149,893	151,865	184,942	214,999	210,331
Without residence ...	50,257	27,977	23,220	39,367	28,941	42,180	38,363
Total ...	516,412	217,419	173,113	191,232	213,883	257,179	248,694
No. of selectors ...	2,979	1,448	1,579	1,518	1,533	1,736	1,740

Particulars as to total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

4. **Queensland.**—The several types of selections under which the freehold may be acquired by conditional purchase are as follows:—(i.) Agricultural farms; (ii.) agricultural homesteads; (iii.) prickly pear selections; and (iv.) free homesteads.

Land is made available for selection by proclamation in the *Gazette*, specifying the modes in which the land may be selected, the area, rent, price and conditions.

The applicant must be over the age of sixteen years. Applications for selections must be made in the prescribed form and be lodged with the land agent for the district in which the land is situated, and must be accompanied by the prescribed deposit. In the case of a prickly pear selection the deposit must be the full amount of the survey fee, and in other cases, except free homesteads, a year's rent and one-fifth of the survey fee. In the case of a free homestead application the deposit consists of an application fee of £1 and one-fifth of the survey fee. If land is open for selection in two or more modes, alternatively, and there are simultaneous applications to select it under different modes, priority among such applications is given to an application for the land as an agricultural homestead, as against an application for it as an agricultural farm, and to an application for it as an agricultural farm as against an application for it as an unconditional selection. In the case of simultaneous applications for the same land as an agricultural farm, priority is secured by an applicant who undertakes to personally reside on the land during the first five years of the lease. Provision is made in the Land Act 1910 for the conversion of one form of selection into another.

(i.) *Agricultural Farms.* The more accessible lands are usually set apart for agricultural selection up to the maximum area of 2560 acres allowed to each selector of an agricultural farm. The term is twenty years, and the price ranges from ten shillings per acre upwards. The annual rent is one-fortieth of the purchasing price, and the payments are credited as part of the price. Conditions relating to residence and improvements must be fulfilled. A selector who obtains a certificate that he has carried out such requirements upon payment of the balance of the purchase money, receives a deed of grant in fee-simple.

During the year 1910, applications were accepted to select agricultural farms to the number of 1733 for 628,222 acres, an average area of 362 acres, at an average price of 22s. 1d. per acre. The number of selections and the total area selected were higher than the corresponding figures for the previous year by 300 and 86,929 acres, respectively. The average area is less by 12 acres, and the average price higher by 4s. per acre.

(ii.) *Agricultural Homesteads.* The maximum area for an agricultural homestead must not exceed 320 acres. Upon fulfilment of the prescribed improvement conditions, a lease may be issued for a period of ten years, during which time the lessee must reside upon the holding. The annual rent will be 3d. per acre, and the purchasing price 2s. 6d. per acre, of which the annual rents are considered to be instalments.

Particulars of agricultural homesteads are given in par. (iv.) hereinafter.

(iii.) *Prickly Pear Selections.* Under the Land Act, 1910, the maximum area held under a prickly pear selection tenure by any one person, may not exceed 2560 acres. The term of the lease is fifteen years. All prickly pear must be destroyed during a prescribed period, and the lease may contain a residential condition. The rent for the first prescribed period is nominal, and the purchasing price is published in the notification of sale. Upon fulfilment of all conditions and payment of the remainder of the purchasing price, the lessee is entitled to a deed of grant in fee-simple.

In the case of prickly pear (bonus) selections, the freehold of the land and a bonus in addition are granted for the complete eradication of the pear.

Particulars of prickly pear selections are given in the following paragraph.



(iv.) *Number and Area of Conditional Purchases, 1901 to 1910.* The following table shews the number and area of conditional purchases for which applications were accepted during each year from 1901 to 1910 :—

**QUEENSLAND.—CONDITIONAL PURCHASES (APPLICATIONS ACCEPTED),**

**1901 to 1910.**

Year.	Agricultural Farms.		Agricultural Homesteads.		Prickly Pear Selections.		Total.	
	Number.	Area.	Number.	Area.	Number.	Area.	Number.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ...	661	160,804	669	155,512	19	48,450	1,349	364,766
1902 ...	683	168,801	523	118,246	10	51,058	1,216	337,605
1903 ...	499	124,026	424	89,037	6	5,423	929	218,486
1904 ...	516	136,092	355	73,705	1	200	872	209,997
1905 ...	962	254,117	448	97,543	7	31,457	1,417	383,117
1906 ...	1,427	438,605	392	96,561	3	9,562	1,822	544,728
1907 ...	1,948	689,916	267	68,464	439	524,956	2,654	1,283,336
1908 ...	1,608	607,164	229	55,152	714	870,849	2,551	1,533,165
1909 ...	1,433	541,293	162	39,654	496	665,614	2,091	1,246,561
1910 ...	1,733	623,222	67	14,778	920	1,308,170	2,720	1,951,170

The average area of agricultural farms selected during the year 1910 was 362 acres at an average price of 22s. 1d. per acre; the average area of agricultural homesteads was 221 acres. The average price of the land selected as prickly pear infested selections during the year was 3s. 4½d. per acre, and of prickly pear frontage selections was 5s. 11d. per acre.

Particulars as to total areas alienated and in process of alienation may be found hereinafter. (See § 11.)

(v.) *Free Homesteads.* The maximum area which may be selected in this manner is 160 acres. The term is five years, and during that period the selector must occupy the land by personally residing on it, and must enclose it with a fence or make improvements equal in value to that of a fence. During the year 1910 the number of acres of land opened for selection as free homesteads was 320, and 17 applications, totalling 2720 acres, were accepted.

**5. South Australia.**—The types of conditional purchases under which land may be alienated in this State are as follows :—(i.) Agreement to purchase, and (ii.) Agreement under the Pinnaroo Railway Act 1903. A month's notice of lands open for application is given in the *Gazette*. Applicants must not be under 18 years of age. Preference is given to applicants who will reside on the land applied for. Interest at the rate of 5 per cent. is charged on arrears due under leases and agreements; if over two months in arrears the Commissioner may recover the same in court. The unimproved value of any land held under any tenure, except under pastoral lease, must not exceed £5000. Exceptions are made in cases where the land to be included in the lease or agreement is suitable only for pastoral purposes, and the carrying capacity of which, together with all other lands held by the lessee or purchaser under any tenure does not exceed 5000 sheep; if the land is outside Goyder's line<sup>1</sup> the limitation may be increased to a carrying capacity of 10,000 sheep.

1. Goyder's line is not exactly based on rainfall, but on the evidence of vegetation ("salt-bush" and "blue-bush," etc.), and marked the northern limit of what was thought to be fit land for agricultural pursuits. The vegetation which was supposed incapable of flourishing in regions of regular rainfall afforded the indications for locating the line.

(i.) *Agreement to Purchase*.—Applications must be made in writing to the Commissioner, and must be accompanied by a deposit equal to the first half-yearly instalment of the purchase-money of the land and improvements. The purchase-money and interest for the land and improvements must be paid at not less than the rate of 2 per cent. per annum by sixty equal half-yearly instalments payable in advance. If the conditions relating to fencing, vermin destruction, and in some cases to residence, be fulfilled the purchase may be completed after a term of six years on payment of all principal and interest due.

(ii.) *Pinnaroo Railway Lands*. Under the Pinnaroo Railway Act 1903 provision was made for opening up about 1,500,000 acres of good agricultural country in the vicinity of a line from Pinnaroo adjoining the Victorian border to Taillem Bend, a distance of eighty-seven miles. These lands are now offered on agreement with covenant to purchase or on perpetual lease under the Crown Lands Act 1903. The railway has been paid for from the proceeds of the land already selected. The conditions of purchase are similar to those stated in par (i.) above.

The total area held on 30th June, 1911, was 452,310 acres; of this area 17,604 acres are held on perpetual and right of purchase leases, allotted before the Pinnaroo Railway Act was passed.

(iii.) *Particulars of Conditional Purchases, 1901 to 1910*. The subjoined table gives particulars of the areas alienated by conditional purchase, on fulfilment of the conditions, at the end of 1901 and from 1905 to 1910 inclusive:—

**SOUTH AUSTRALIA.—AREAS ALIENATED UNDER AGREEMENTS TO PURCHASE,  
1901 to 1910.**

Year ...	1901.	1905.	1906.	1907.	1908.	1909.	1910.
Area in acres ...	57,460	16,106	6,439	57,890	68,977	128,656	160,668

Particulars as to the total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

**6. Western Australia.**—The various types of selections under which the freehold can be alienated by conditional purchase in this State are as follows:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conditional purchase by direct payment; (iv.) conditional purchase of blocks for vineyards, orchards, or gardens; (v.) conditional purchase of grazing lands; and (vi.) free homestead farms.

All applications must be lodged, with the prescribed deposit and fees, at the agency in which the land is situated. No person may acquire under homestead farm, conditional purchase, and grazing lease, collectively, or any two or more of them, either as lessee or transferee, more than 2000 acres of cultivable land (that is, land acquired as homestead farm and by conditional purchase), or an equivalent area of grazing land, or cultivable and grazing land mixed. Where a man has selected up to the maximum allowed, his wife may hold a further area of 1000 acres of cultivable land or its equivalent area of grazing or of cultivable and grazing land. Five acres of grazing land are deemed to be an equivalent of two acres of cultivable land, and all unclassified land disposed of prior to the 1st February, 1907, is deemed to be cultivable land until otherwise classified by the Lands Department. If the holder require the land to be classified he must pay the prescribed fee.

(i.) *Residential Conditional Purchase.* Under this form of tenure any person over the age of sixteen years may select from a minimum area of 100 acres to a maximum of 1000 acres. The price of the land varies from ten shillings to forty shillings per acre payable in twenty years by half-yearly instalments, or sooner, at the occupier's option, but for the first three years of the lease only sixpence per acre per annum is charged; subsequent payments are increased when the value of the land is over ten shillings per acre. Residence by a member of the family of the holder during 6 months of the year is compulsory. Improvements equal in value to the value of the land, but not exceeding £1 per acre, must be effected. One half of the land must be fenced within five years, and the whole within ten years.

Special conditions governing improvements apply to holders of land in the neighbourhood of railways, but such improvements need not exceed in cost the amount which the Agricultural Bank is prepared to advance to the holder. After 5 years from the date of the lease the holder may obtain a Crown grant, if the prescribed conditions have been fulfilled and the purchase money paid.

(ii.) *Non-residential Conditional Purchase.*—Under this form of tenure the conditions are similar to those described under § 6, 6 (i.), except that residence is not compulsory, and the total value of improvements must be 50 per cent. over and above the value of the land, but need not exceed 30s. per acre.

(iii.) *Conditional Purchase by Direct Payment.* Unalienated Crown lands of an area of 100 to 1000 acres at a price not less than 10s. per acre may be acquired by direct payment of 10 per cent. of the purchase-money with the application; then a license for seven years may be granted, and the balance of the purchase-money is payable within twelve months. Improvements to the value of 10s. per acre and fencing must be carried out. The Crown grant may be obtained when all conditions have been fulfilled, and purchase-money and fees have been paid.

(iv.) *Conditional Purchase of Small Blocks for Vineyards, Orchards or Gardens.* Areas of five to fifty acres at a price of not less than £1 per acre may be selected for these purposes. The purchase-money and survey cost must be paid in instalments within three years. The land must be fenced and one-tenth of the area planted with vines, fruit trees or vegetables.

(v.) *Conditional Purchase of Grazing Lands.* Lands suitable for grazing purposes only, and not within an agricultural area, may be selected at a price not less than 3s. 9d. per acre, which is payable half-yearly at the rate of one-twentieth of the total purchase-money. The maximum area is 5000 acres, and the minimum area 500 acres, unless the land adjoin an applicant's holding, when the minimum area is 300 acres. Conditions pertaining to residence, improvements and fencing must be fulfilled.

(vi.) *Free Homestead Farms.* Any male person of 16 years of age and upwards, not holding more than 100 acres within the State, may select 10 to 60 acres on lands opened for free homestead farms in the South-west, Central, or Eucla division. The holder or approved agent must reside six months of the year for the first five years on the holding, and improvements at the rate of four to six shillings per acre per annum for seven years must be carried out. Part of the improvement money must be expended on fencing, which must be completed in seven years. The Crown grant for a homestead farm within a surveyed block will not be issued separately unless the holder pays the prescribed survey fees and 30s. for the Crown grant.

(vii.) *Conditional Auction Sales.* Sales of town and suburban lands at auction have already been referred to (see § 5, 6, above). For suburban lands set apart for cultivation the payment of the purchase money is extended over five years; the land must be fenced within two years, and cultivation must be carried on.

(viii.) *Areas Alienated Absolutely under Forms of Conditional Purchase, 1901 to 1911.* The following table shews the area of the selections for which grants were issued, the prescribed conditions having been fulfilled, during the year 1901 and from 1906 to 1911.

Particulars as to the total areas alienated absolutely, and in process of alienation, are given in a later part of this section. (See § 11).

**WESTERN AUSTRALIA.—AREAS SELECTED CONDITIONALLY FOR WHICH CROWN GRANTS WERE ISSUED, 1901 to 1911.**

Particulars.	1901.	1906. <sup>1</sup>	1907. <sup>1</sup>	1908. <sup>1</sup>	1909. <sup>1</sup>	1910. <sup>1</sup>	1911. <sup>1</sup>
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Free homestead farms	147	9,655	12,765	16,122	18,482	35,334	93,444
Conditional purchases	5,234	20,351	38,116	138,812	61,272	64,957	92,986
Poison land leases ...	...	...	135,444	130,729	2,668	3,284	...
Village allotments ...	...	2	...	...	...	...	...
Total ...	5,381	30,008	186,825	285,663	82,422	103,575	186,430
Number of holdings	48	177	356	437	475	564	1,073

1. For financial year ended 30th June.

(ix.) *Area Conditionally Alienated, 1901 to 1911.* The following table shews the areas conditionally alienated under various methods of selection during the year 1901 and from 1906 to 1911 :—

**WESTERN AUSTRALIA.—AREAS CONDITIONALLY ALIENATED, 1901 to 1911.**

Particulars.	1901.	1906.*	1907.*	1908.*	1909.*	1910.*	1911.*
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Conditional Purchase—</i>							
Deferred payments (with residence)	161,302	465,326	355,778	447,159	595,115	910,953	890,816
" (without residence)	46,498	237,016	284,953	199,584	265,561	475,860	574,805
Direct payments (without residence)	1,909	3,236	2,175	2,645	1,762	3,641	2,458
<i>Village Allotments</i> ...	...	15	9	3	...	...	...
<i>Free Homestead Farms</i> ...	63,623	155,740	109,090	189,086	257,528	238,102	201,172
<i>Under the Agric. Lands Purchase Acts</i>	4,295	24,933	11,674	8,201	35,599	23,787	49,983
<i>Homestead or Grazing Leases</i> ...	64,834	25,578	375	295,696	850,066	238,876	194,839
<i>Poison Land Leases</i> <sup>1</sup> ...	9,530	...	...	...	...	...	...
<i>Workingmen's Blocks</i> <sup>2</sup> ...	8	104	149	131	189	148	99
Total ...	351,999	911,948	764,203	1,142,505	2,005,820	1,891,367	1,923,172
Number of holdings ...	1,888	4,201	3,573	4,362	5,861	5,403	4,265

\* For year ended 30th June. 1. Provisions repealed by Act of 1906.

2. Closer settlement. (See § 8, 7, hereinafter.)

Particulars as to the total areas in process of alienation are given in a later part of this section. (See § 11.)

**7 Tasmania.**—The various types of conditional purchases in this State are as follows:—(i.) Selection of rural land; (ii.) homestead areas; (iii.) selection in mining areas; and (iv.) sales by auction on credit, either of town or rural lands. Upon all first-class lands purchased or selected under the Acts now in force habitual residence is

necessary for five years, commencing to run two years after the date of purchase, and must be continuous; but on land within a mining area the necessary period of residence is reduced to three years. If purchased at auction on credit all lands (town or rural) must be improved to the value of a sum at least equal to the sale price of the land. No person may hold more than 200 acres of first-class, 250 acres of second-class, and 500 acres of third-class lands on credit at one time. The Lands Department advances four-fifths of the survey fee to the selector of first-class land, but for lands purchased by auction and for second and third-class lands, the survey fee must be paid in full. The amount of this fee ranges according to the class and area of land from £4 10s. to £20.

(i.) *Selection of Rural Lands.* From 15 to 500 acres according to the quality of the land may be selected. The cash price ranges from 5s. an acre upwards, payable with interest over terms of 14 to 18 years. The conditions as to residence on first-class land and as to improvements on all classes are as stated above.

(ii.) *Selection of Homestead Areas.* 50 acres of first-class land at the price of £1 an acre with one-third added for credit, may be selected as a homestead area. Provision is made for easy payments, extending over a term of 19 years. A grant will be issued upon fulfilment of the conditions pertaining to improvements and residence.

(iii.) *Selection in Mining Areas.* From 10 to 100 acres in a proclaimed "Mining Area" may be selected as first-class agricultural land. The terms as to payment of purchase-money are the same as in the case of selection of rural lands, mentioned above.

(iv.) *Conditional Sales on Credit.* Both town and rural lands may be sold on credit, either at auction or by private contract. In the case of sales of town lands on credit, improvements may be required to be effected. Such improvements are obligatory in the case of credit purchase of rural lands. Residence for five years is necessary in the case of a credit purchase of first-class rural land (except lands within a mining area). The purchase-money is payable over a term of fourteen years.

(v.) *Areas Sold Conditionally, 1901 to 1910.* The following table shews the areas alienated absolutely under systems of conditional purchases and sales on credit, the conditions having been fulfilled, and also shews the areas sold conditionally and the applications for conditional purchases received and confirmed, during the year 1901 and from 1905 to 1910, inclusive:—

#### TASMANIA.—CONDITIONAL PURCHASES, 1901 to 1910.

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.	1910.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Completion of Conditional Purchases</i> <sup>1</sup> ...	23,781	15,926	27,528	36,492	42,362	41,942	42,276
<i>Sold Conditionally—</i>							
Free Selections ...	40,004	161,815	139,433	121,186	120,420	183,237	145,651
Homestead Areas ...	9,108	2,554	1,884	1,148	2,037	971	364
Auction Sales on Credit ...	12,961	4,380	1,415	2,571	2,740	4,968	4,365
Other Sales (Town Lands) ...	636	1,384	1,853	2,093	1,632	2,400	2,380
<b>Total...</b> ...	<b>62,709</b>	<b>170,133</b>	<b>144,585</b>	<b>126,998</b>	<b>126,829</b>	<b>191,596</b>	<b>152,760</b>
<i>Applications—</i>							
Received ...	1,444	2,848	2,448	1,995	3,225	2,929	3,171
Confirmed ...	768	1,655	1,164	992	1,249	1,501	1,180

1. Including selections and sales on credit.

Particulars of total areas alienated and in process of alienation are given hereinafter. (See § 11.)

## § 7. Leases and Licenses.

**1. Introduction.**—Leases and licenses are issued in all the States for various terms and upon various conditions. In Victoria, Queensland, and South Australia perpetual leases are issued for an indefinitely long period upon payment of an annual rent, while in all the States leases or licenses of comparatively large areas may be obtained for pastoral purposes. Provision has also been made in all the States for convenient forms of leases and licenses for various special purposes, and also for special classes of lands. The leases and licenses dealt with below are exclusive of those issued under Closer Settlement and kindred Acts, and also of those issued for mining and auxiliary purposes. (See § 8 and 9 hereinafter.)

**2. New South Wales.**—The following are the various types of leases and licenses issued in this State:—(i.) Conditional leases; (ii.) conditional purchase leases; (iii.) settlement leases; (iv.) improvement leases; (v.) annual leases; (vi.) residential leases; (vii.) special leases; (viii.) snow leases; (ix.) pastoral leases; (x.) scrub leases; (xi.) inferior lands leases; (xii.) occupation licenses; (xiii.) Western lands leases.

(i.) *Conditional Leases.* Before applying for a conditional lease it is necessary to apply for a residential conditional purchase, in virtue of which such a lease may be held. The area of land conditionally leased may not be less than 40 acres, nor more than three times the area of the conditional purchase, nor must the area of the two together exceed, except by permission, 1280 acres in the Eastern, or 2560 acres in the Central division. The lease is for forty years, and the annual rent may, on application, be periodically determined by appraisalment. The whole or part of the lease may be converted into an additional conditional purchase.

The total area held under conditional leases on the 30th June, 1910, was 15,581,163 acres, the total rent therefrom being £189,509, as compared with an area of 15,480,660 acres at a rent of £184,929 on the 30th June, 1909.

(ii.) *Conditional Purchase Leases.* The intending settler can, for a small initial outlay by way of deposit, obtain a lease for forty years at a moderate rent and under easy conditions, together with a right of ultimately converting it into a freehold. No one may apply who already holds land other than town or suburban lands or land leased from a private individual. The conditions specified in Section 40 of the Crown Lands Act of 1895, and Section 14 of the Act of 1905, should be read by intending applicants. The rent equals 2½ per cent of the capital value of the land, which is determined every fifteen years by the Minister and Local Land Board. A condition of ten years' continuous personal residence on or near the holding is attached to holdings of this class.

The following statement gives particulars of conditional purchase leases applied for and confirmed during the year ended 30th June, 1910.

### NEW SOUTH WALES.—CONDITIONAL PURCHASE LEASES.

YEAR ENDED 30TH JUNE, 1910.

Applications Received.		Applications Confirmed.			
Number.	Area.	Number.	Area.	Capital Value.	Annual Rent
	Acres.		Acres.	£	£
288	171,474	267	147,902	174,651	3,755

The total area held under conditional purchase leases on 30th June, 1910, was 667,795 acres, compared with an area of 534,499 acres held on the same date in 1909.

Designs for the subdivision of large areas of country in the Dorrigo and Ellenborough River districts have been prepared. Roads are in course of construction to facilitate settlement.

(iii.) *Settlement Leases.* 1280 acres for agricultural, and up to 10,240 acres for grazing purposes may be selected as settlement leases; these areas may be increased by the Local Land Board by additional settlement leases.

The lease is for a term of forty years. The annual rent for every period of fifteen years may be fixed by the Minister or on appeal by appraisalment. The holding must be the *bond-fide* residence of the lessee. Regulations as to fencing and the destruction of vermin must be complied with. 1,280 acres of the lease may be converted into a homestead grant. Settlement leases may be converted into original conditional purchases. (See 267 *ante*.)

The following statement gives particulars of applications for settlement leases received and confirmed during the year ended 30th June, 1910:—

#### NEW SOUTH WALES.—SETTLEMENT LEASES.

YEAR ENDED 30TH JUNE, 1910.

Applications Received.		Applications Confirmed.		
Number.	Area.	Number.	Area.	Rent.
	Acres.		Acres.	£
207	525,807	193	571,816	6,025

The total area held under settlement leases on the 30th June, 1910, was 7,569,925 acres at an annual rent of £94,843, as against 6,671,742 acres at a rent of £85,602 on the same date in the preceding year.

(iv.) *Improvement Leases.* Scrub or inferior lands can be obtained in the Eastern or Central Divisions by auction or tender at a moderate annual rental for a lease term of twenty-eight years. 640 acres may be converted into a homestead selection. On the 30th June, 1910, an area of 6,884,330 acres was held under improvement leases, the total annual rent amounting to £51,884 or an average of 1½ pence per acre.

(v.) *Annual Leases.* Annual leases are renewable, and any number of leases, each of whose area may be 1920 acres, may be held by the lessee. The annual rent is notified in the *Cazette*. Security of tenure is not guaranteed. On the 30th June, 1910, there were current 10,302 annual leases for 5,405,694 acres, producing a yearly rental of £35,825.

(vi.) *Residential Leases.* Only lands situated within proclaimed gold or mineral fields are available for holdings of this class. An applicant must be a holder of what is termed a "miner's right," or "mineral license," and must pay a deposit of £1, provisional rental of one shilling per acre applied for, and the survey fee. The maximum area that may be leased is twenty acres, and the term may not exceed twenty-eight years. Fences and buildings must be erected. On the 30th June, 1910, there were 910 leases current for 13,387 acres at a rental of £1536.

(vii.) *Special Leases.* These leases are issued chiefly for industrial or business purposes, for the erection of dams, tanks, irrigation works, mills, etc. The area may not exceed 320 acres, except in the case of leases under secs. 89 and 92 of the Act of 1884, for such purposes as wharves, jetties, tramways, and irrigation works, and the term of a special lease may not exceed twenty-eight years. Special leases may be obtained either by application, purchase at auction, or by tender. A special lease may, under the Crown Lands (Amendment) Act 1908, be converted into (a) a conditional purchase lease, (b) a conditional purchase, (c) a homestead selection, (d) a settlement lease, or (e) a conditional lease. On the 30th June, 1910, there were 4692 leases current, comprising an area of 496,759 acres, at a total rent of £27,588, as compared with 419,469 acres at a rent of £25,583 in the preceding year.

(viii.) *Snow Leases.* Lands not held under pastoral or other lease, which may be usually covered with snow for a part of each year, may be leased in areas of not less than 1280 acres, nor more than 10,240 acres. Such leases are sold by auction or let by tender or by after-auction tender for terms not exceeding ten years. On the 30th June, 1910, there were 22 leases current, covering an area of 71,730 acres, at a rental of £389 per annum.

(ix.) *Leases under Section 18, Act of 1903.* The only existing pastoral leases under the Crown Lands Act are situated in the Western district (see para. xiii. hereof). Under the provisions of the amending Act of 1903, Section 18, leases may, on the recommendation of the Local Land Board, be granted to the registered holder of any pastoral lease, occupation license, or preferential occupation license, for an area not exceeding one-third of the total area comprised within the lease, license, or lease and license, at the date of expiration of the pastoral lease. The term of the lease may not exceed twenty-eight years, and the lease is subject to such rent and conditions as may be determined. At the end of the year 1909-10, there were 153 leases current for 1,136,141 acres at a rental of £10,381 per annum.

(x.) *Scrub Leases.* Leases of land declared as "Scrub Land" may be sold by auction or tender for a term of twenty-one to twenty-eight years. The total area held under scrub leases on the 30th June, 1910, was 2,234,314 acres at a total rent of £8347.

(xi.) *Inferior Land Leases.* Isolated or abandoned inferior lands may be leased by auction or tender for a period of from twenty to twenty-eight years. At the close of the financial year 1909-10 there were current thirty leases, covering 106,562 acres, at a rental of £275 per annum.

(xii.) *Occupation Licenses.* There are two forms of occupation licenses, viz., (a) preferential, consisting of the areas within expired pastoral leases, and (b) ordinary, which relate to the parts of holdings formerly known as resumed areas. Occupation licenses are granted annually by the Minister for Lands at rents determined by the Land Boards, and are terminable at notice. On the 30th June, 1910, there were 1391 occupation licenses current, embracing about 9,994,307 acres; seventy-three permissive occupancies over rifle ranges, etc., having an area of 7310 acres, were granted to the Commonwealth Government.

(xiii.) *Western Lands Leases.* Subject to existing rights and to the extension of tenure to the 30th June, 1943, which might be granted to a lessee on bringing his lease within the provisions of the Western Lands Act 1901 (see § 2, 1, ii., above), all forms of alienation, other than by auction and leases, prescribed by the Crown Lands Act, ceased to operate within this division from the 1st January, 1902. Lands are declared open for lease by notice in the *Government Gazette*. The annual rent is determined by the Commissioners for periods not exceeding ten years. No rent or license fee may be less than



2s. 6d. per square mile, but it may not be fixed at a higher rate than sevenpence per sheep on the carrying capacity of the land as determined by the Commissioners. All lands leased must be fenced. Special leases may be granted to discoverers of artesian water.

(xiv.) *Leases and Licenses Current, 1901 to 1910.* On the 30th June, 1910, there were 61,207 leases and licenses current under the Lands Department and the Western Land Board, comprising 127,755,783 acres of Crown Lands. Of these leases there were 40,368, comprising 22,002,710 acres, in the Eastern Division; 17,845, comprising 29,582,587 acres, in the Central; and 2,994, comprising 76,170,486 acres, in the Western Division.

The following table shows the areas held under various descriptions of leases and licenses at the end of the year 1901, and at the end of the financial years 1906-7, 1907-8 and 1908-9, and also the area and rental of leases current on the 30th June, 1910:—

### NEW SOUTH WALES.—AREAS OCCUPIED UNDER LEASES AND LICENSES,

1901 TO 1910.

Leases and Licenses.	1901.	1906-7.	1907-8.	1908-9.	1909-10.	
					Area.	Rent.
	Acres.	Acres.	Acres.	Acres.	Acres.	£
Pastoral ... ..	44,805,221	3,393,372	1,258,955	1,196,715	1,137,095	706
Outgoing pastoral lessees ...	—	807,359	1,133,082	1,142,409	1,136,141	10,381
Western land leases ...	—	69,766,491	73,227,685	73,711,644	73,912,534	88,263
Occupation (i.) Ordinary ...	25,812,215	8,640,653	8,530,311	8,067,161	7,464,823	15,376
.. licenses (ii.) Preferential ...	12,985,651	3,969,825	4,004,925	3,190,085	2,529,484	15,847
Homestead leases ... ..	10,953,388	1,650,309	931,910	807,206	636,440	1,433
Condit'l. leases—(i.) Gazetted ...	13,014,055	15,178,016	15,384,176	15,480,660	15,581,163	189,509
(ii.) Not gazetted (under provisional rent) ...	966,887	17,647	954,500	815,795	741,802	6,181
Conditional purchase leases ...	—	187,839	328,448	534,499	669,795	20,561
Settlement leases ... ..	3,468,675	5,711,520	5,942,867	6,671,742	7,569,925	94,843
Improvement .. ..	5,551,060	6,527,792	6,550,713	6,676,655	6,884,330	51,584
Annual .. ..	6,755,942	6,344,890	6,666,862	5,885,768	5,405,694	35,825
Scrub .. ..	1,535,415	2,030,149	2,127,279	2,253,952	2,234,314	8,346
Snow land .. ..	79,582	27,682	70,330	76,930	71,730	388
Special .. ..	124,877	298,612	354,866	419,469	496,759	27,588
Inferior land .. ..	288,530	251,579	128,729	106,090	106,562	275
Artesian well .. ..	358,071	255,692	225,276	102,400	92,160	198
Blockholders' .. ..	—	7	1	1	1	6
Residential leases (on gold and mineral fields) ...	5,751	10,211	11,606	12,640	13,387	1,536
Church and school lands ...	97,207	41,611	41,534	29,647	25,188	716
Permissive occupancies ...	118,634	724,861	992,510	915,521	979,667	6,059
Prickly pear leases ... ..	—	68,583	65,082	62,138	66,789	960
<b>Total under Lands Dept. and Western Land Board</b>	<b>126,921,161</b>	<b>125,904,700</b>	<b>128,931,647</b>	<b>128,179,127</b>	<b>127,755,783</b>	<b>576,881</b>

The total annual rent derived from the leases and licenses issued by the Lands Department and the Western Lands Board amounted to £576,881, or an average of 1.084 pence per acre. Particulars regarding leases and licenses issued by the Mines Department are given in a later part of this section. (See § 9. *Occupation of Crown Lands for Mining Purposes.*)

3. **Victoria.**—The various types of leases and licenses (exclusive of Closer Settlement and Mines Department leases and licenses) which may be issued in this State are as follows:—(i.) Grazing area leases; (ii.) perpetual leases; (iii.) Mallee perpetual leases; (iv.) licenses of auriferous lands; (v.) swamp or reclaimed lands leases; (vi.) grazing licenses and pastoral leases; (vii.) leases and licenses for other than pastoral purposes and (viii.) State forests and timber reserves licenses.

(i.) *Grazing Area Leases.* These leases may be granted for any term of years expiring not later than the 29th December, 1920. The area leased must not exceed 200, 640, or 1280 acres of first, second, or third-class land respectively, for which the annual rent must not be less than 3d., 2d., and 1d. an acre for first, second and third class land respectively. Fencing or other improvement conditions are imposed, and the lessee must destroy all vermin and noxious weeds. The Crown reserves to itself the right to resume the land, in which case the lessee receives the value of his interest in the lease and improvements.

The lessee may select an agricultural or grazing allotment out of the land leased in the manner indicated above. (See § 6, 3 ii.)

(ii.) *Perpetual Leases.* The area of any Crown lands which may be granted to any one person under perpetual lease must not exceed three times the area which may be selected. The lessee must enclose the holding with a fence, carry out improvements, and conform with conditions as to residence. The rent payable by the lessee (other than for mallee, swamp, or reclaimed lands, which are specially dealt with under the respective headings), is 4 per cent. on the unimproved value of the land. The lessee may obtain an agricultural or grazing allotment license. (See § 6, 3, i.).

(iii.) *Mallee Perpetual Leases.* The rent payable for a mallee perpetual lease is  $1\frac{1}{4}$  per cent. per annum on the estimated unimproved value of the land and is reviewed every ten years. Residential conditions are not enforced if the prescribed improvements be carried out. The lessee may, at any time, surrender and obtain a mallee agricultural license (see above § 6, 3, iii.), or if the conditions under a license have been fulfilled, a mallee agricultural lease may be issued.

(iv.) *Licenses of Auriferous Lands.* Annual licenses may be issued for areas not exceeding 20 acres. Improvement and residential conditions must be complied with, and an annual fee paid. The land remains subject to mining conditions. The license may be surrendered and in lieu thereof an agricultural or grazing allotment may be acquired. (See above § 6, 3, i. and ii.)

(v.) *Swamp or Reclaimed Lands.* An allotment of 160 acres of swamp or reclaimed lands may be leased either for a term of 21 years, or under a perpetual lease, or under a conditional purchase lease (see § 6, 3, v.), or may be disposed of by public auction (see § 5, 3), on condition that (a) the holder will keep open all drainage works on and adjacent to the land, and (b) that the holder will make permanent improvements on the land to the value of 10s. an acre in each of the first three years, unless the Minister omits or modifies the condition. The rent under a perpetual lease is payable at the rate of 4 per cent. per annum on the value of the land. Under a conditional purchase lease, 3 per cent. half-yearly in 63 instalments pays off the purchase money and interest.

(vi.) *Grazing Licenses and Pastoral Leases.* Pastoral lands are now occupied under annual grazing licenses which are also issued for lands set apart as reserves, and Crown lands, not required for other purposes. There is no limit to the area which may be so held; the rental charged varies according to the grazing value.

(vii.) *Leases and Licenses for other than Pastoral or Agricultural Purposes.* Leases are granted of any Crown lands not exceeding (except in the case of leases for guano or other manure) three acres, for a term of not more than twenty-one years, and at an annual rent of not less than £5. These leases are granted for various purposes, such as—for obtaining guano, stone or earth; for sites of inns, stores, bridges, ferries, factories, quays, or landing places; for the working of mineral springs, and for the manufacture of salt. If the lessee fail to use the land *bona-fide* for the purpose for which he leased it, the lease may be cancelled at any time. Leases are also granted to persons who are willing to construct canals, docks, roads or tramways. Annual licenses are used for any of the purposes for which the leases are granted as above, and also for bee-farms. If the licensee of a site for a butter factory or creamery,

or for a residence, garden, inn, store, smithy, or similar building not within the boundaries of a city, has been in possession for five years and has constructed improvements on the land, provided that there are no objections to the alienation of the land on the ground of being auriferous or other reasons of a public nature, he may purchase the allotment at an appraised price and receive credit for all rent paid. No such licensee can purchase more than one site. Similar holdings under miner's right for areas not exceeding one acre may be purchased under Sec. 36, Mines Act 1890, after two and a half years' possession.

(viii.) *State Forests and Timber Reserves Licenses.* Grazing licenses, residence licenses, and licenses to cut timber are issued for lands situated within State forests and timber reserves, which are now controlled by the Forest Branch of the Department of Mines under the Forests Act 1907.

(ix.) *Areas held under Leases and Licenses, 1901 to 1910.* The following statement shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901, and from 1906 to 1910 inclusive :—

**VICTORIA.—OCCUPATION OF CROWN LANDS UNDER LEASE OR LICENSE,  
1901 to 1910.**

Tenure.	Area in Acres.					
	1901	1906.	1907.	1908.	1909.	1910.
Pastoral Leases ... ..	39,450	64,150	59,510	63,510	51,450	14,200
Grazing Area Leases... ..	2,338,649	3,533,792	3,402,536	3,163,800	3,087,173	3,006,998
Grazing Licenses—						
Land Acts 1890-91 ... ..	5,908,985	—	—	—	—	—
Land Acts 1901 (exclus. of Mallee)	—	5,820,997	5,833,488	6,469,855	6,774,794	5,763,489
Mallee Lands ... ..	—	4,897,943	5,217,846	4,467,218	4,970,042	5,273,592
Auriferous Lands (Licenses)... ..	377,427	101,163	104,555	106,040	103,986	101,623
Swamp Lands (Leases) ... ..	4,200	4,450	4,513	4,566	4,500	4,038
Perpetual Leases ... ..	8,137	29,267	33,319	31,952	32,354	22,150
Mallee Pastoral Leases ... ..	7,980,592	1,731,217	1,305,914	987,186	718,249	637,083
Mallee Allotment Leases ... ..						
Perpetual Leases under Mallee Lands						
Acts 1896-1901 ... ..	448,842	501,013	604,236	641,219	641,837	610,693
Wattles Act 1890 ... ..	4,427	—	—	—	—	—
Total ... ..	17,110,709	16,683,992	16,565,917	15,955,346	16,384,395	15,433,875

4. **Queensland.**—In this State Crown lands may be occupied under the following types of leases and licenses:—(i.) Grazing farms; (ii.) grazing homesteads; (iii.) occupation licenses; (iv.) special leases; (v.) perpetual lease selections; (vi.) special licenses; and (vii.) pastoral leases. General conditions as to applications for selections have been mentioned above. (See § 6, 4.)

(i.) *Grazing Farms.* Under this form of tenure an applicant may not obtain more than 60,000 acres, and the term of the lease may not exceed twenty-eight years. In order to obtain priority of claim the applicant may tender an annual rent higher than the notified one, for the first seven years. As soon as the land is fenced the selector becomes entitled to a lease, and may thereafter mortgage the same. The lease is subject to the condition of occupation during the whole term. The Crown may resume the whole or part of the lease.

Particulars of grazing farms are given in paragraph (iii.) hereinafter.

(ii) *Grazing Homesteads.* Lands opened for grazing selections are available for fifty-six days as grazing homesteads only, at the same rental, and for the same term of lease as for grazing farms. Personal residence is necessary for the first 5 years; thereafter the lease is subject to the condition of occupation.

Particulars of grazing homesteads are given in paragraph (iii.) hereinafter.

(iii.) *Grazing Farms, Homestead and Scrub Selections, 1901 to 1910.* The following table shews the number of grazing farms, grazing homesteads, and scrub selections, for which applications were accepted during each year from 1901 to 1910:—

**QUEENSLAND.—GRAZING FARMS, HOMESTEAD AND SCRUB SELECTIONS,  
1901 to 1910.**

Year.	Grazing Farms.		Grazing Homesteads		Scrub Selections.		Total.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ...	247	1,371,283	47	290,785	19	48,450	313	1,710,518
1902 ...	245	1,410,364	38	171,104	10	51,058	293	1,632,526
1903 ...	106	709,183	25	123,026	6	5,423	137	837,632
1904 ...	150	1,244,072	21	176,435	1	200	172	1,420,707
1905 ...	210	1,738,882	23	120,982	7	31,457	240	1,891,321
1906 ...	262	2,067,275	56	404,499	3	9,562	321	2,481,336
1907 ...	374	3,028,696	54	315,444	8	58,954	436	3,403,094
1908 ...	314	2,459,653	91	870,325	4	16,401	409	3,346,379
1909 ...	304	3,114,593	116	1,509,210	2	8,489	422	4,632,292
1910 ...	182	1,406,087	243	2,477,743	1 <sup>1</sup>	5,324	426	3,889,154

1 The Land Act 1910, makes no provision for the further selection of land as scrub selections.

The average rent in 1910 was  $\frac{7}{8}$ d. per acre for grazing farms and  $1\frac{1}{4}$ d. per acre for grazing homesteads.

Particulars of total areas held under leases and licenses are given in a later part of this section. (See § 11.)

(iv.) *Occupation Licenses.* Annual licenses are granted to occupy Crown lands which have been declared open for such occupation by notification in the *Gazette*. The rent is as specified by the notification or as bid by the licensee, but the Minister may by notice before the 1st September in any year increase the rent. The total number of licenses in force at the end of the year 1910 was 1729 comprising an area of 59,117 square miles, the total rent being £27,799. Particulars of the area held under license for previous years are given in a later part of this section. (See § 11.)

(v.) *Special Leases.* Leases of any portion of land may be issued for a term not exceeding thirty years to any person for any manufacturing, industrial, business or recreation purposes. Leases for a similar term may be issued for any country lands reserved for public purposes and which are infested with noxious weeds.

During the year 1910 there were 130 leases for special purposes granted, comprising an area of 6590 acres, the total annual rent being £472, and there were extant at the end of the year 475 such leases, reserving rents amounting to £2785 per annum. In addition, 35 leases of reserves, aggregating 21,918 acres, were granted at rentals amounting to £198 per annum; the total number of these leases of reserves in force at the end of the year being 105, reserving rents amounting to £452. Particulars of special leases for previous years are given in a later part of this section. (See § 11.)

(vi.) *Perpetual Lease Selections.* Land proclaimed to be open for agricultural farm selection (see § 6, 4, above) may also be opened for perpetual lease selection, and the latter mode may be conceded priority of application over the former. The rent for the first period of ten years of the lease is  $1\frac{1}{2}$  per cent. on the proclaimed purchase price of the land for

agricultural farm selection. The rent for each succeeding period of ten years is determined by the Land Court. Similar conditions of occupation and improvement as are prescribed for agricultural farms are attached to perpetual lease selections.

(vii.) *Special Licenses.* Licenses to cut timber or to dig for any stone, gravel, earth, shells, or guano, may be issued.

(viii.) *Pastoral Leases.* Existing pastoral leases are now deemed to be held under the Land Act 1910. Lands open for selection as pastoral leases may be leased for a period not exceeding thirty years. The annual rent, per square mile, for the first ten years must be notified. If the value of the holding become enhanced by the development of public works in the neighbourhood, or by the occurrence of minerals on the holding, the rent may be redetermined.

The following table shews the total areas of pastoral leases (including resumed parts) occupied under the various Acts at the end of the year 1901 and from 1906 to 1910, inclusive:—

**QUEENSLAND.—PASTORAL LEASES OCCUPIED UNDER VARIOUS ACTS, 1901 to 1910.**

Particulars.	Area in Square Miles.					
	1901.	1906.	1907.	1908.	1909.	1910.
Pastoral Leases Act 1869 ... ..	39,307	5,494	3,524	1,513	1,379	890
Crown Lands Act 1884 ... ..	243,586	37,626	31,802	26,842	18,733	11,710
Land Act 1897 ... ..	15,046	4,653	3,686	3,686	1,307	86
Pastoral Leases Act 1900 ... ..	50,076	27,249	27,130	24,061	24,061	21,739
Pastoral Holdings New Leases Act 1901 ... ..	—	129	339	349	347	500
Land Act 1902 ... ..	—	209,824	235,597	258,975	280,960	305,924
Total ... ..	348,015	284,975	302,078	315,426	326,787	340,849

The gross area held at the end of the year 1910 for purely pastoral purposes (under *Occupation Licenses and Pastoral Leases*) was 399,965 square miles, at rentals aggregating £321,686 per annum. The area was 13,706 square miles greater than that for the previous year, and the rental was £10,352 greater. The average rent was 16s. 1d. per square mile, as against 16s. 1½d. for the previous year.

5. *South Australia.*—The following are the various types of leases and licenses which are issued in this State:—(i.) Perpetual leases; (ii.) miscellaneous leases; (iii.) grazing and cultivation leases; (iv.) reclaimed swamp leases; (v.) licenses for special purposes; (vi.) leases under the Pastoral Act 1904; and (vii.) leases with right of purchase. General information regarding applications for leases and agreements has been given above. (See § 6, 5.) Leases of lands in the Northern Territory are dealt with in the next succeeding part of this sub-section.

(i.) *Perpetual Leases.* All surveyed Crown lands are available for perpetual lease. The land is vested in the lessee in perpetuity, and the rent is determined for each period of fourteen years, at least twelve months before the expiration of each such period. The rent of land suitable only for pastoral purposes is fixed at pastoral rates. All minerals are reserved to the Crown, and the Crown may resume any part of the land for the purposes of roads, mining, etc., on making compensation to the lessee.

(ii.) *Miscellaneous Leases.* Leases of Crown lands, not exceeding 640 acres in extent, may be granted on such terms and conditions as the Governor may think fit to any *bona-fide* discoverer of any guano or other valuable substance or deposit (not including minerals).

The possession of wells and land contiguous thereto to the extent of one to five square miles may be resumed and leased by private contract or public auction.

Leases of Crown lands for the purpose of obtaining guano, stone, clay, for sites for stores, inns and factories may be acquired for a term not exceeding twenty-one years, and of forest reserve lands for a term not exceeding forty-two years.

(iii.) *Grazing and Cultivation Leases.* Every miscellaneous lease under any of the Crown Lands Acts for grazing and cultivation purposes, or grazing purposes only, is held to have been lawfully granted, and the power of resumption, if required for any purpose of public utility, is reserved to the Crown.

(iv.) *Reclaimed Swamp Lands.* The rent of these lands may not be less than 4 per cent. per annum on the cost of reclaiming and the unimproved value of the land. For the first three years a part only of this rent need be paid. The maximum area is fifty acres. (See also § 8, 6 iii. hereinafter.)

(v.) *Special Licenses.* Licenses to remove timber, stone, guano, manure, shell or seaweed from Crown lands, and for fishermen's residences and drying grounds, for manufactures, slaughter-houses or saw mills, for depasturing stock, or other approved purposes for any term not exceeding a year, may be granted by the Commissioner or any person authorised by him on payment of a fee as fixed by regulation.

(vi.) *Leases under the Pastoral Act 1904.* This Act deals with Crown lands which do not come within the scope of the Lands Acts.

(a) *General Provisions.* The area, situation, term of rent, price to be paid for improvements, and the cost of valuation of each block are published in the *Gazette*. The first year's rent and the lease fee must be paid within one month after allotment. A lease does not entitle the holder to mine, or to remove timber. The Commissioner may advance part of the cost of vermin-proof fencing. Blocks not exceeding 1000 square miles may be leased to charitable incorporated bodies for aboriginal reserves.

(b) *Terms and Conditions.* Unless already improved up to £3, every lessee is required to spend in improvements on the land a sum fixed by the Board, not exceeding ten shillings per mile per annum, until at least £3 per mile has been so expended. The term of the lease is from twenty-one to forty-two years. The rent is determined by the Board.

(c) *Resumption and Free Leases of Pastoral Lands.* The lessee is entitled to compensation for land resumed from his run, or for loss or depreciation in value of his lease caused by such resumption, and for improvements. If water is discovered by any person on any run, an area from one to five square miles contiguous to the water may be resumed. If the lessee discover an artesian supply on his run ten miles distant from any other artesian supply, he is entitled to 100 square miles of land surrounding the well, rent free for ten years.

Very little pastoral country was applied for or allotted during 1910, although 14,685 square miles at low rentals, once stocked, have been open to application for some years. In addition there are available about 148,000 square miles of unoccupied country. The area of land held under pastoral leases is 130,607 square miles at an annual rent of £24,595 and yearly instalments of purchase-money for improvements £12,806; also 12,260 square miles are held on annual permits at a rental of £1086.

(vii.) *Leases with Right of Purchase.* Under the Crown Lands Act of 1888, now repealed by the Crown Lands Act 1903, and the Pastoral Act 1904, leases were granted with a right of purchase for a term of twenty-one years, containing a right of renewal for a further term of twenty-one years and a right of purchase, exercisable at any time after the first six years at a price of not less than five shillings an acre. The renewed leases are now governed by Part V. Division V. of the Act of 1903.

(viii.) *Area held under Lease, 1901 to 1910.* The following table shews the area held under leases and licenses at the end of the year 1901, and from 1905 to 1910 :—

**SOUTH AUSTRALIA (Proper).—AREA UNDER LEASES AND LICENSES, 1901-1910.**

Particulars.	1901.	1905.	1906.	1907.	1908.	1909.	1910.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases	5,639,519	4,898,422	4,724,954	4,579,418	4,424,814	4,232,009	3,697,423
Perpetual Leases...	7,115,782	10,573,154	11,445,372	12,568,576	13,269,290	14,088,223	14,789,305
Pastoral Leases ...	68,916,125	76,402,950	76,685,510	79,388,240	83,009,650	87,038,450	91,434,450
Other Leases ...	3,905,729	2,273,383	2,113,718	1,985,866	1,812,959	1,513,032	1,394,964
<b>Total held under Lease ...</b>	<b>85,577,155</b>	<b>94,147,909</b>	<b>94,969,554</b>	<b>98,522,100</b>	<b>102,516,713</b>	<b>106,871,714</b>	<b>111,316,142</b>

**6. Northern Territory.**—The system of land settlement in the Northern Territory is being reorganised by the Commonwealth Government. The various types of leases and licenses current are as follows :—(i.) Agricultural leases ; (ii.) pastoral leases ; (iii.) special leases ; (iv.) leases with right of purchase ; (v.) tropical products leases ; (vi.) leases for horsebreeding stations ; and (vii.) licenses. (See § 2, 4, ii.)

(i.) *Area held under Lease, 1901 to 1910.* The following table shews the total area held under lease at the end of the year 1901 and from 1906 to 1910 :—

**NORTHERN TERRITORY.—AREAS HELD UNDER LEASE, 1901 to 1910.**

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases	1,067	2,397	2,771	2,931	5,224	667
Pastoral Leases...	111,476,240	108,347,680	105,918,880	102,123,040	95,559,840	98,729,120
Other Leases ...	1,176,381	1,376,010	1,347,858	1,293,457	512,650	445,236
<b>Total Leased ...</b>	<b>112,654,288</b>	<b>109,726,087</b>	<b>107,269,509</b>	<b>103,419,428</b>	<b>96,077,714</b>	<b>99,175,023</b>

**7. Western Australia.**—The following are the various types of leases and licenses issued in this State :—(i.) Pastoral leases ; (ii.) permits and licenses to cut timber ; (iii.) special leases ; and (iv.) licenses for quarrying.

(i.) *Pastoral Leases.* Leases are granted for pastoral purposes throughout the State, but the lands leased may be thrown open to selection by the Crown at any time upon giving twelve months' notice to the lessee. All pastoral leases expire on the 31st December, 1928. The smallest areas leased range from 3,000 to 50,000 acres according to the division, and the annual rents range from three shillings to twenty shillings for each 1000 acres. After the first two years the lease must be stocked to the extent of at least 10 head of sheep or one head of large stock for every 1000 acres comprised therein. On fulfilment of this condition, lessees on the Kimberley Division may obtain a reduction of one-half the rent.

(ii.) *Permits and Licenses to Cut Timber.* The alienation of forests and timber lands is now regulated by the Lands Act Amendment Acts of 1904 and 1906. The Governor is authorised to declare any Crown Lands to be a State forest or timber reserve, and to grant to persons desirous of erecting saw-mills permits to cut timber in any State forest or timber reserves, or on any Crown land, upon certain conditions. Licenses may also be granted to hew and fell timber for piles, poles, or baulks, subject to the payment by the licensee of royalties proportional to the measurement of the timber hewn or felled. The amount of all fees or royalties is fixed by the Governor.

(iii.) *Special Leases.* Crown land may be leased for the purpose of obtaining guano or other manure, and for the collection of salt, for a term not exceeding twenty-five years; and for the purpose of procuring stone, earth, mineral water; the production of electricity, gas and water; the erection of inns, stores, bridges, and jetties, for a period not exceeding twenty-one years.

(iv.) *Licenses for Quarrying.* Licenses are granted to any person to quarry and dig for any rock, soil, or other material, on any lands vested in the Crown, not being on a goldfield or in a mining district.

(v.) *Areas Held under Leases and Licenses, 1901 to 1911.* The following table shows the number and area of leases and licenses issued during the year 1901, and from 1906 to 1911:—

**WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED, 1901 to 1911.**

Particulars.	1901.	1906. <sup>1</sup>	1907. <sup>1</sup>	1908. <sup>1</sup>	1909. <sup>1</sup>	1910. <sup>1</sup>	1911. <sup>1</sup>
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral Leases ...	19,909,251	19,255,374	26,367,463	16,161,172	9,737,020	10,130,358	9,057,002
Special Leases ...	149	2,805	13,727	71,900	12,438	6,212	3,112
Leases in Reserves ...	324	1,000	75,640	152,050	31,376	327,020	174,007
Timber Leases and Permits <sup>2</sup>	109,630	41,370	19,300	30,433	38,500	236,970	68,430
Residential Lots ...	221	199	21	1	3	6	4
Total ...	20,019,575	19,300,748	26,476,151	16,415,556	9,869,397	10,700,566	9,302,555
Number Issued ...	1,466	1,370	873	870	480	505	396

1. For financial year ended the 30th June. 2. No timber leases granted since 1903.

Particulars as to the total area occupied under leases and licenses are given in a later part of this section. (See § 11.)

8. *Tasmania.*—The several forms of leases and licenses in this State are as follows:—(i.) Grazing leases; (ii.) miscellaneous leases; (iii.) timber licenses; and (iv.) occupation licenses.

(i.) *Grazing Leases.* Grazing leases of unoccupied country may be offered at auction, but such runs are liable at any time to be sold or occupied by virtue of a license for other than pastoral purposes, and to be otherwise alienated and dealt with. The rent is payable in advance. The land may be resumed by the Crown, which compensates the lessee for his improvements.

(ii.) *Miscellaneous Leases.* The Governor in Council may grant leases for a period not exceeding fourteen years of any land bordering upon a navigable river, or on the sea, if required for the purpose of constructing wharves, docks, jetties, or any other works of public utility, also for the purpose of constructing watercourses, or of erecting a manufactory, mill, or such other work, or for constructing railways or tramways.



(iii.) *Timber Licenses.* Temporary licenses for a period not exceeding five years may be granted for the purpose of felling timber, or for removing gravel, clay, or stone, etc., on or from particular localities.

(iv.) *Occupation Licenses.* Occupation licenses may be issued for a period not exceeding twelve months upon payment of a fee of five shillings. The licensee may occupy one quarter of an acre within any mining area.

Residence land licenses for mining areas are granted on similar terms upon payment of a fee of ten shillings, and business licenses upon payment of a fee of twenty shillings.

(v.) *Area held under Leases and Licenses.* The following table shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901 and from 1906 to 1910:—

#### TASMANIA.—LEASES AND LICENSES, 1901 to 1910.

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Ordinary Leased Land ...	1,280,688	1,117,311	1,145,823	1,235,823	1,173,823	1,176,900
Islands ...	149,165	91,131	109,531	103,130	90,100	87,100
Land Leased for Timber ...	40,768	86,817	88,035	91,972	100,098	108,889
Total ...	1,470,621	1,295,259	1,343,389	1,430,925	1,364,021	1,372,889

### § 8. Closer Settlement.

1. *Introduction.*—In all the States, Acts have been passed authorising the Governments to repurchase alienated lands for the purpose of cutting them up into blocks of suitable size and throwing them open to settlement on easy terms and conditions. Special Acts have also been passed in several of the States authorising the establishment on particular lines of co-operative communities, village settlements, and labour colonies. Lands may be acquired either compulsorily or voluntarily in New South Wales, Victoria, Queensland, and Tasmania, but only voluntarily in South Australia and Western Australia.

The following table gives particulars up to the latest available date of operations under the Closer Settlement Acts for each State and the whole Commonwealth:—

#### CLOSER SETTLEMENT.—TOTAL AREAS ACQUIRED AND ALLOTTED UP TO

30th JUNE, 1911.

Particulars.	N.S.W.	Victoria.	Qld.¶	S. Aust.	W. Aust.	Tas.	Cwth.
Area acquired ... acres	676,278	455,954	537,449	592,972	297,391	34,441	2,594,485
Purchasing price ... £	2,525,717	3,177,831	1,490,489	1,732,618	262,302	98,142	9,287,099
Farms, etc., allotted { No.	1,316	2,708	2,095	1,588	†	137	7,844*
{ acres	604,319	312,794	437,496	509,393	261,942	29,726	2,155,670

\* Exclusive of Western Australia. † Not available. ¶ To 31st December, 1910.

The following table shews the areas of private lands acquired in each State for each financial year from 1901 to 1911 inclusive:—

## CLOSER SETTLEMENT.—AREAS OF PRIVATE LANDS ACQUIRED, 1901 to 1911.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.*	S. Aust.*	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ...	...	28,553	132,760	...	46,624	...	207,937
1902 ...	...	33,655	266,925	156,481	55,439	...	512,500
1903 ...	...	33,662	286,952	156,481	72,372	...	549,467
1904 ...	...	33,662	308,605	174,963	131,283	...	648,513
1905 ...	...	36,516	308,605	214,752	148,614	...	708,487
1906 ...	53,523	148,902	381,724	260,355	165,945	...	1,010,449
1907 ...	142,403	207,775	409,563	326,576	170,881	13,397	1,270,595
1908 ...	142,403	211,140	456,742	354,454	170,881	25,177	1,360,797
1909 ...	321,209	237,400	497,095	500,464	215,822	33,079§	1,805,069
1910 ...	461,723	343,829	497,095†	527,501	249,522	34,441§	2,114,111
1911 ...	676,278	455,954	537,449‡	592,972	297,391	34,448§	2,594,492

\* Particulars are for calendar years. † Up to the 31st December, 1909. ‡ Up to 31st December, 1910.  
 || To 30th June. § Including 4581 acres of Crown lands.

2. **Government Loans to Settlers.**—For the purpose of promoting pastoral, agricultural, and similar pursuits, and with the object of assisting settlers in erecting buildings and carrying out improvements on their holdings, general systems have been established in all the States, under which financial aid is rendered to settlers by the State Governments. These general systems are more particularly referred to in the section in this book dealing with "Agriculture." In many of the Closer Settlement and similar Acts, however, special provisions have been inserted with the object of lending money to settlers taking up land under these Acts, with which to build homes or effect improvements. The principal features of these provisions are referred to below.

3. **New South Wales.**—Under the Closer Settlement Act of 1901 provision was made for the acquisition of private lands or of Crown lands held under lease, for the purpose of closer settlement. No power of compulsory resumption was conferred by the Act, which was consequently practically inoperative. Under the Closer Settlement Act of 1904, as amended in 1906, 1907, and 1909, and the Closer Settlement Promotion Act 1910, the Government is empowered to resume private lands, either by agreement or by compulsory purchase, and to alienate them on favourable terms to persons who desire to settle and make homes for themselves and their families on the soil. The administration of the Closer Settlement Acts is in the hands of a Board. Land acquired under the Acts is subdivided into blocks or farms, and by notification in the *Government Gazette* is declared to be a settlement purchase area available for application. The *Gazette* notice also gives all necessary information as to the class and character of the land, and the capital value, area, etc., of each block or farm.

(i.) **Closer Settlement Purchase.** Under this tenure a settler may acquire the freehold of the land under a system of deferred payments. A deposit of 5 per cent. of the notified value of the settlement purchase must be lodged with the application, and a similar amount by way of instalment, paid annually until the purchase-money, together with interest at the rate of 4 per cent., is paid off. Under this system the balance due to the Crown will be paid off in thirty-eight years, the holding then becoming a freehold. A condition of residence for ten years attaches to every settlement purchase. Under the amending Act of 1909 postponement of the payment of instalments may be granted by the Minister, subject to the conditions (a) that additional improvements to the value of the amount postponed be made on the land within twelve months, and (b) that interest at 4 per cent. per annum be paid on the amount postponed.

(ii.) *Closer Settlement Annual Leases.* Leases for areas not exceeding 320 acres may be obtained under the Closer Settlement Acts at a rent fixed by the Board. They may be renewed from year to year on payment of the yearly rent in advance. The land held under this form of lease may be applied for by the lessee as a settlement purchase.

(iii.) *Sales by Auction.* Areas within closer settlement districts necessary for township settlement may be set apart by notification in the *Gazette*. Allotments, each of which may not exceed half an acre in extent, within such areas may be sold by auction.

(iv.) *Private Sub-division.* An important feature of the amending Act of 1909 is the power which is given to owners for private sub-division of lands which have been notified by proclamation for resumption. Upon the owner entering into an agreement with the Minister to sub-divide the land and to sell or lease in such areas and subject to such terms as may be agreed upon, the Minister is empowered to suspend the power of resumption for a period not exceeding two years.

(v.) *The Closer Settlement Promotion Act 1910.* Under this Act any three or more persons who are qualified to hold settlement purchases and who desire to purchase from the same owner any private lands may, upon entering into an agreement with the owner and subject to valuation by the Advisory Board and the Savings Bank Commissioners, acquire such lands through the Minister on Closer Settlement conditions. The maximum sum which may be advanced for the purposes of this Act may not exceed £1,000,000 in any financial year.

(vi.) *Areas Acquired and Disposed of, 1901 to 1911.* Up to the 30th June, 1911, ten areas had been opened for settlement under the Closer Settlement Acts.

The following statement gives particulars of the areas opened up to the 30th June, in each year from 1906 to 1911:—

#### NEW SOUTH WALES.—CLOSER SETTLEMENT AREAS, 1906 to 1911.

Year Ended 30th June.	Areas.			Capital Values.		
	Acquired Lands.	Adjoining Crown Lands.	Total.	Acquired Lands.	Adjoining Crown Lands.	Total.
	Acre.	Acre.	Acre.	£	£	£
1906 ...	53,523	13,166	66,689	137,795	24,589	162,384
1907 ...	142,403	25,712	168,115	438,490	37,178	475,668
1908 ...	142,403	25,719	168,122	438,362	37,192	475,554
1909 ...	321,209	28,064	349,273	1,246,508	42,878	1,289,386
1910 ...	461,723	83,045	544,768	1,624,858	147,977	1,772,835
1911 ...	591,830	86,127	677,957	2,297,194	148,749	2,445,943

The total area thus set apart has been divided into 1396 farms comprising 653,144 acres, the remaining 24,802 acres being reserved for recreation areas, roads, stock routes, schools, etc. Up to the 30th June, 1911, 1316 of these farms had been allotted.

The Murrumbidgee Irrigation Act 1910 provides for the acquisition of 1,668,000 acres near Narrandera, in Riverina, for irrigation and other purposes in connection with the Burrinjuck Irrigation Scheme.

The following table gives particulars as to the disposal of the farms by closer settlement purchase for each year ended the 30th June, 1905 to 1911:—

## NEW SOUTH WALES.—CLOSER SETTLEMENT ALLOTMENTS, 1905 to 1911.

Year.	Farms Allotted by Board to Date.			Total Amount received in respect of Settlement Purchases.	Total Number of Applications received.
	Number.	Area.	Value.		
	No.	Acres.	£	£	No.
1904-5 ...	49	18,568	56,235	2,817	50
1905-6 ...	98	48,567	120,445	6,560	120
1906-7 ...	320	154,922	470,787	24,698	551
1907-8 ...	326	157,649	475,554	31,793	558
1908-9 ...	683	312,075	1,192,293	73,193	953
1909-10 ...	941	471,639	1,731,480	147,945	1,209
1910-11 ...	1,316	604,319	2,420,035	220,720	1,328

(vii.) *Labour Settlements.* These settlements were founded by the Labour Settlements Acts 1893 and 1894, which have now been amended and repealed by the Labour Settlements Act 1902. Land may be set apart for lease for a period of 28 years as a labour settlement under the superintendence of a Board of Control. The functions of the Board of Control are to enrol members of the settlement; to make regulations concerning the work to be done; to apportion the work among the members; and to distribute the wages and profits. The Minister is empowered to grant financial assistance to the Board of Control.

(a) *Settlements Established.* Only two settlements had been established under the Act up to the 30th June, 1911. Particulars are given in the following statement:—

## NEW SOUTH WALES.—PARTICULARS OF LABOUR SETTLEMENTS, 30th JUNE, 1911

Settlement.	Date of Establishment.	Area.	Population.				Value of Improvements.	Loans Advanced by the Government.
			Men Enrolled.	Women.	Children.	Total.		
		Acres.					£	£
Bega ...	1893	1,360	26	30	90	146	3,110	2,420
Wilberforce ...	1893	435	10	9	32	51	1,280	2,480
Total ...	—	1,795	36	39	122	197	4,390	4,900

4. *Victoria.*—(i.) *Closer Settlement Acts, 1904 to 1909.* The Closer Settlement Acts (see § 2, p. 264, hereof) are administered by a Board consisting of three persons appointed by the Governor-in-Council, and intrusted with power to acquire, either compulsorily or by agreement, private lands in any part of the State for the purpose of Closer Settlement. The Board may dispose of all lands acquired, either Crown lands or repurchased lands, on conditional purchase leases either as (a) farm allotments not exceeding £2500 in value, (b) workmen's homes allotments not exceeding £100 in value, and (c) agricultural labourers' allotments not exceeding £200 in value. The price of the land must cover the cost of the original purchase and the cost of all improvements. Land acquired by the Board may also be sold in small areas in fee simple as sites for churches, public halls, butter factories, creameries, or recreation reserves.

The Board may approve of an agreement between an owner and one or more persons to purchase a farm or farms, not exceeding £2500 in value. On the property being acquired by the Board, the applicant obtains a lease under Closer Settlement conditions.

(a) *Closer Settlement Leases.* Every conditional purchase lease is for such a term of years as may be agreed upon by the lessee and the Board, and payment must be made with interest at  $4\frac{1}{2}$  per cent. per annum by sixty-three half-yearly instalments, or such lesser number as may be agreed upon. Under the amending Act of 1906 postponement of payment of instalments may be granted by the Board up to 60 per cent. of the value of improvements. The lessee must personally reside during eight months in each year on his allotment, and for six years he must carry out prescribed improvements. Thereafter he may, with permission, transfer, assign, mortgage or sublet his allotment. After twelve years, if all conditions have been fulfilled, a Crown grant will be issued. In the case of workmen's homes allotments the land must be fenced within one year, and a dwelling-house to the value of at least £50 must be erected within the same time; within two years further improvements must be made to the value of at least £25. As regards agricultural labourers' allotments, a dwelling-house to the value of at least £30 must be erected within one year, and within two years the allotment must be fenced.

(b) *Advances to Settlers.* The Board may make advances for the purpose of fencing and building dwelling-houses, and is empowered to erect dwelling-houses, outbuildings, or improvements on any allotment at a cost not exceeding £250 for any one allotment. Any sum so expended is repayable by instalments extending over a prescribed period, not greater than twenty years. Provision has also been made for deferring payments in cases of hardship, as well as for advances (to the extent of 60 per cent. of the value of the improvements) to enable work to be carried on. Special advances may also be granted to purchase wire netting in rabbit-infested districts.

(c) *Loans to Municipalities.* Under the Amendment Act of 1907 loans may be made out of the Closer Settlements Fund for the purpose of carrying out any road-making or other public works within the boundaries of an estate.

(d) *Areas acquired and made available for Closer Settlement, 1901 to 1911.* The following statement shews the operations which have taken place in Victoria under the provisions of the Closer Settlement Acts, 1898 to 1910, up to the 30th June in each year from 1901 to 1911, inclusive:—

### VICTORIA.—CLOSER SETTLEMENT, 1901 to 1911.

Year ended 30th June.	Total Area Acquired by Government to Date.	Total Cost to Date.	How Made Available for Settlement.						Number of Applications Granted to Date.	Total Receipts to Date.	Repayments of Principal to Date.	Area Available for Settlement.
			Farm Allotments.	Workmen's Homes Allotments.	Agricultural Labourers' Allotments.	Town Allotments.	Roads and Reserves.					
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£	Acres.	
1901	23,553	151,566	28,461	69	—	44	240	193	7,529	—	—	
1902	33,655	205,715	33,477	69	—	48	329	239	21,181	5,002	—	
1903	33,662	206,285	33,483	69	—	48	329	239	28,846	6,921	—	
1904	33,662	209,341	33,483	69	—	48	329	239	42,128	16,625	—	
1905	36,516	228,982	35,513	152	366	48	335	336	56,549	18,110	19	
1906	148,902	1,008,839	116,371	186	924	232	775	933	92,638	28,869	2,790	
1907	207,775	1,349,661	156,358	428½	1,108	308½	827½	1,212	163,203	60,224	2,429	
1908	211,140	1,471,300	186,971	473	917	724	1,708	1,470	245,095	85,501	10,549	
1909	237,400	1,579,958	193,015	228	660	610	2,242	1,645	337,803	121,247	5,789	
1910	343,829*	2,390,738	237,670	243	1,659	617	2,242	1,880	391,746	153,890	9,302	
1911	455,954	3,177,831	363,676	571	2,761	—	—	2,708	606,558	234,038	54,214	

\* Includes eight estates (97,315 acres) not yet made available for settlement.

(e) *Areas Alienated and in Process of Alienation, 1901 to 1911.* The following table shews, so far as available, particulars of areas alienated absolutely and in process of alienation on the 30th June, 1901, and from 1906 to 1911, inclusive :—

**VICTORIA.—CLOSER SETTLEMENT. AREAS ALIENATED AND IN PROCESS OF ALIENATION, 1901 to 1911.**

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.	1911.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Alienated Absolutely—</i>							
Conditional Purchases completed ...	...	274	1,700	2,504	4,924	8,705	9,770
Sold for cash, etc. ...	183	237	239	268	1,307	1,320	1,362
Total ...	183	511	1,939	2,772	6,231	10,025	11,132
<i>In Process of Alienation ...</i>	...	114,691	164,561	174,812	190,784	221,565	303,024

(ii.) *The Small Improved Holdings Act 1906.* Under this Act, which has been repealed, 2822 acres at a cost of £53,568 allotted to 260 settlers were purchased close to towns where industrial employment could be obtained by the settlers.

These settlements are now under the control of the Closer Settlement Board.

(iii.) *Village Communities.* The settlement of land by Village Communities is now provided for in the Land Act 1901, but is not availed of to any extent. Certain unalienated Crown lands were surveyed into allotments of one to twenty acres. The price is not less than twenty shillings an acre. Additional areas may be acquired by conditional purchase. The rent is a nominal one for 3 years. The total amount of monetary aid advanced up to the 30th June, 1911, was £67,379, of which sum the amount repaid to date was £37,236. After three years a lease may be obtained.

Particulars of areas in process of cultivation under the Act are given hereinafter. (See § 11, 3).

On the 30th June, 1911, there were 1199 settlers actually residing, and 150 not residing, but improving, making a total of 1349 in occupation. Including wives and children the total number in residence was 5500. At the same date the area under cultivation was 16,215 acres; the value of live stock £76,544, and of improvement, £204,730.

5. **Queensland.**—Under the provisions of the Closer Settlement Act of 1906 private lands may be re-purchased by the Crown, either by agreement or compulsorily.

(i.) *Compulsory Acquisition.* The owner of an estate in possession, the whole of which is proposed to be taken compulsorily, has the right to retain in one block, land of the value of £10,000 to £20,000 according to the value of the whole estate. The maximum sum which may be expended on the acquisition of land for the purpose of closer settlement is £500,000 in any one year.

(ii.) *Disposal of Land.* A sufficient part of the land acquired must be set apart for roads, public reserves, and townships, and the remainder is proclaimed open for selection as agricultural farms under the Land Act 1910, which repealed the Land Acts 1897 to 1909; the term of the lease is 25 years. The rent to be paid for the first year is equal to £10 for every £100 of the purchasing price; and (no payment being required during the second, third, or fourth years) an annual payment of £8 2s. 7d. for every £100, continued from the fifth to the twenty-fifth year will, at the end of the term, have paid off the principal sum together with interest.

(iii.) *Areas Acquired and Selected, 1901 to 1910.*—The operations under the Closer Settlement Acts resulted up to the end of the year 1910 in the acquisition by the Government of twenty-seven estates, of a total area of 537,449 acres, at a total cost of £1,490,489. The following table gives particulars of the operations under the above Acts at the end of each year from 1901 to 1910, inclusive:—

QUEENSLAND.—CLOSER SETTLEMENT, 1901 to 1910.

Year.	Number of Estates Acquired.	Total Area Acquired to Date.	Total Amount of Purchase Money.	Total Area Selected to Date.
		Acres.	£	Acres.
1901 ... ..	15	132,760	335,056	124,710
1902 ... ..	19	266,925	699,815	230,149
1903 ... ..	20	286,952	790,445	253,096
1904 ... ..	21	308,605	877,058	277,939
1905 ... ..	21	308,605	877,058	289,878
1906 ... ..	24	381,724	968,844	301,908
1907 ... ..	26	409,563	1,057,463	340,405
1908 ... ..	27	456,742	1,208,013	364,334 <sup>1</sup>
1909 ... ..	27	497,095	1,349,251	409,381 <sup>1</sup>
1910 ... ..	27	537,449	1,490,489	437,496 <sup>1</sup>

1. In addition there were at the end of the year 1910, 10,821 acres sold at auction and 3129 acres retained by the Government for experimental farms and other sales.

The total area opened for selection up to the end of the year 1910 was 512,681 acres, of which 437,496 acres had been selected by 1798 selectors at a total purchasing price of £1,323,827. There remained 75,185 acres unselected or reserved. The total amount of rent paid up to the same date was £678,014, the amount in arrear being £9,045. At the end of the year 1910 there were 1798 selectors holding 1694 agricultural farms, 394 unconditional selections, and two prickly pear infested selections. In addition, land and improvements to the value of £75,084 had been sold at auction.

(iv.) *The Special Agricultural Selections Acts 1901 to 1905.* These Acts were partly repealed by the Amending Act of 1909, which was in its turn repealed by the Land Act 1910. Under the last Act land may be set apart for members of bodies of selectors who desire to settle in the same locality. The terms and conditions are similar to those in force for single selectors. Every group selection shall be subject to the condition of personal residence during the first five years of the term.

The Special Agricultural Selections Act 1905 provides that financial aid may be granted to all or any of the members of a body of selectors of agricultural homesteads. Advances may also be made to each selector for a value not exceeding £80 for the purpose of buying tools, rations, stock and poultry.

The portions opened for "group settlement" in 1910 numbered 924, and comprised a gross area of 748,172 acres. Up to the end of that year 720 portions, comprising 628,423 acres, valued at £343,406 had been applied for by members of the bodies of settlers for whom they were opened. The greater part of the remaining lots have since been selected.

6. *South Australia.*—Under the provisions of the Crown Lands Acts the Commissioner may repurchase land for the purposes of closer settlement at a cost not exceeding £600,000 in any two years.

Reference has already been made to the provisions of the Irrigation and Reclaimed Lands Acts 1908, regarding the settlement of reclaimed lands. (See § 7, 5 iv.)

(i.) *Disposal of Land.* The Crown Lands Act Further Amendment Act 1910, enlarges the value of the blocks into which estates may be subdivided for closer settlement purposes from £2000 to £5000 unimproved value. The purchase money with interest thereon at 4 per cent. per annum is payable in seventy half-yearly instalments, the first ten payments being interest only.

For the first five years, improvements to the value of £3 for every £100 of the purchase money must be yearly effected.

(ii.) *Areas Acquired and Selected.* The following table shews the area of land acquired by the Government in South Australia for the purposes of closer settlement and the manner in which the same has been disposed of under the provisions of the Crown Lands Acts:—

**SOUTH AUSTRALIA.—CLOSER SETTLEMENT, 1902 to 1910.**

Year.	Area of Lands Repurchased to 31st Dec.	Agreements with Covenants to Purchase.	Total Area Leased as Homestead Blocks.		Perpetual Leases.	Miscellaneous Leases.	Sold.	Remainder Un-occupied (including Roads).
			Right of Purchase.	Perpetual Lease.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1902	156,481	—	2,717	3,073	90,128	309	403	59,851
1903	156,481	60,331	2,487	2,895	89,378	274	566	550
1904	174,063	81,566	2,268	2,795	86,881	295	626	542
1905	214,752	116,854	2,057	2,907	82,431	295	736	9,472
1906	260,355	168,930	1,930	2,482	78,642	295	1,987	6,089
1907	326,576	235,673	1,758	2,306	77,017	211	4,808	4,803
1908	354,454	261,457	1,590	1,953	74,651	281	9,142	5,380
1909	500,464	296,013	1,381	1,779	75,045	50,056	24,641	51,549
1910	527,501	327,480	1,241	1,510	62,386	40,077	35,266	29,541

During the financial year 1910-11 four estates aggregating 71,686 acres were repurchased. The total area repurchased at the 30th June, 1911, was 597,624 acres, the purchase money being £1,760,635. Of that area 509,893 acres had been allotted to 1587 persons, the average area to each being 321 acres.

(iii.) *Irrigation Areas.* Under the Irrigation and Reclaimed Lands Act 1908, 1909 and 1910, special provisions are made for granting perpetual leases of reclaimed lands. The maximum area of irrigable or reclaimed land one person may hold in any irrigation area is 50 acres. Each block is offered on perpetual lease, at a rent not less than a sum equivalent to 4 per cent. on the unimproved value of the land, plus the cost of reclaiming. For the first year only one-quarter of the fixed rent is payable, for the second year one-half, and for the third year three-quarters.

(a) *Irrigation Boards.* Irrigation Boards, to whom advances of money may be made by the Commissioner for Crown Lands, may be constituted in irrigation areas.

(b) *Government Loans to Settlers.* Under Part V. of the Act a fund is to be constituted, to be called the Lessees of Reclaimed Lands Loan Fund, consisting of moneys provided by Parliament, to be advanced to assist lessees to make improvements on their lands. The total amount owing by any lessee may not exceed £300. In cases of hardship the time may be extended by the Commissioner, the deferred payments carrying interest at 5 per cent.

In January, 1910, the Waikerie village district was proclaimed an irrigation area.

(iv.) *Village Settlements.* Out of the reserved lands the Commissioner is directed to set apart for the purpose of village settlement such land as he shall consider fit (a) for horticultural purposes, to be termed "horticultural land;" (b) for agricultural purposes.



to be termed "commonage land;" and (c) land whereon any irrigation works are situated. Land so set apart is to be divided as follows:—Horticultural lands into blocks of as nearly as practicable equal unimproved value, and of about ten acres in extent; and the commonage lands into one or more blocks of such area as the Commissioner may determine, and the lands so set apart in each case form the district of the association. No person may hold more than two blocks. Commonage lands may only be leased to the association on perpetual lease, and all unleased horticultural blocks are under the control of the association. Every member of each association must provide or contribute towards the maintenance and regulation of irrigation works and the care and cultivation of the commonage lands.

As the Waikerie district has been proclaimed an irrigation area under the Irrigation and Reclaimed Lands Acts 1908 and 1909, and the settlers at both Ramco and Kingston have applied to be dealt with under the same Acts, this would leave only the Lyrrup Village Settlement, which is in a better position, both financially and as regards population, than the others.

(v.) *Homestead Blocks.* Aboriginal reservations, except those at Point McLeay or Point Pearce, and other suitable lands may be offered as homestead blocks on perpetual lease or lease with a right of purchase. Each block must not exceed £100 in value, and residence by a member of the family for at least nine months of every year is compulsory.

There is now hardly any demand for homestead blocks, persons generally preferring small blocks of repurchased or Crown lands on ordinary conditions. The system appears to be of value only in centres of population where work can be obtained, and within a reasonable distance of a school.

(a) *Advances to Blockholders.* Advances up to £50 may be made by the Commissioner to any homestead blockholder who has complied with the conditions of his lease or agreement, to assist in erecting permanent buildings on the blocks, or other improvements. Advances must be repaid, with interest at 4 per cent. per annum, by twenty equal instalments, commencing twelve months from the date of advance. The Commissioner may, in case of hardship, extend the time of repayment, deferred payments bearing interest at 5 per cent. per annum. The total amount advanced up to the 30th June, 1911, was £40,457, of which £37,468 had been repaid.

(b) *Particulars of Homestead Blocks.* The total number of leases and agreements of which purchase had been completed to the 31st December, 1910, was 1669, comprising 25,035 acres, at a purchase price of £56,240 or an average of £2 5s. per acre, the average of each holding of which purchase was completed being 15 acres.

7. *Western Australia.*—Under the Agricultural Lands Purchase Act 1909, which repealed and consolidated the Agricultural Lands Purchase Acts 1896 to 1904, sums not exceeding in the aggregate £400,000 may be expended on the repurchase of Crown lands near the railways, suitable for immediate cultivation.

(i.) *Acquisition of Land by the Government.* For the purpose of carrying out the provisions of the Acts, a Land Purchase Board has been constituted. Advised by the report of the Board, the Minister, with the approval of the Governor, may make a contract for the acquisition of the land by surrender at the price fixed by the Board, or at any lesser price.

(ii.) *Sale of Repurchased Land.* After reservation of part of the repurchased land for public purposes, the remainder is thrown open for selection. The maximum quantity held by one person must not exceed 1000 acres; in special cases 2000 acres.

(iii.) *Conditions of Sale to Selectors.* The maximum selling price of any re-purchased land is equal to 105 per cent. of the actual cost of the land plus the cost of any improvements made upon it. A lease for twenty years is issued at a rent, the half-yearly instalments of which are to be at the rate of £3 17s. 9d. for each £100 of the selling price. Improvements must be made to the value of one-fifth of the purchase-money every two years of the first ten years of the lease. One-half of the land must be fenced within the first five years and the whole within ten years. Loans may be granted to selectors under the provisions of the Agricultural Bank Acts.

(iv.) *Areas Acquired and Selected, 1901 to 1911.* The transactions conducted under the provisions of the Agricultural Lands Purchase Acts are shewn for each year since 1901 in the subjoined table :—

WESTERN AUSTRALIA.—CLOSER SETTLEMENT, 1901 to 1911.\*

Year.	Total Area Acquired.	Total Purchase- money.	Roads, Reserves, etc.	Total Area made available for Selection.	Area Se- lected during the Year.	Total Area oc- cupied to Date.	Balance of Area available for Selection.	Total Re- venue received to Date.
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	£
1901 ...	46,624	52,764	1,459	45,165	4,295	37,235	7,929	14,451
1902 ...	55,439	60,514	1,712	53,727	11,540	48,616	5,111	23,538
1903 ...	72,372	73,395	2,665	69,707	16,232	65,368	4,339	29,815
1904*	131,283	82,580	4,734	126,549	42,305	105,106	21,443	37,371
1905-6*	165,945	100,811	9,009	156,936	24,933	139,553	17,383	52,445
1906-7 ...	170,881	109,373	8,624	162,257	11,673	147,817	9,504	65,420
1907-8 ...	170,881	109,373	8,652	162,229	8,201	155,436	6,793	82,030
1908-9 ...	215,822	131,373	11,142	204,680	30,950	189,820	15,531	94,438
1909-10	249,522	158,041	10,757	228,823	25,134	213,416	15,407	111,125
1910-11	297,391	262,302	14,876	282,515	50,032	261,942	20,573	129,386

\* Since the year 1904 the figures are given as up to the 30th June instead of the 31st December; 1905 figures are therefore omitted.

On the 30th June, 1911, the total expenditure, exclusive of purchase-money but including interest, was £58,378, which left a balance of £71,008. At the same date the amount invested as sinking fund was £72,300. During the year 1910-11 two properties, namely those at Avondale and Bowes, having a total area of 47,868 acres, were thrown open to settlement.

(v.) *Working Men's Blocks.* Any person not already holding land within the State is entitled to obtain a lease of lands which have been surveyed and thrown open for selection as working men's blocks. The maximum area that may be selected by one person is, if within any town or goldfield, half an acre, or five acres elsewhere. The price is not less than twenty shillings per acre, payable in ten years by half-yearly instalments. Residence and improvement conditions must be fulfilled. At the expiration of the lease, or at any time after five years from the date of the commencement of the lease, upon compliance with all conditions and upon payment of the full purchase-money and fee, a Crown grant will be issued. No person who has once held a working-man's block is allowed to select another, except under very special circumstances.

The following table shews the number and area of accepted applications for working men's blocks during each year, as well as the total number and area in existence at the end of the year 1901 and for each year from 1905 to 1911, inclusive :—

## WESTERN AUSTRALIA.—PARTICULARS OF WORKING MEN'S BLOCKS, 1901 to 1911

Year ...	...	1901.	1905.	1906. <sup>1</sup>	1907. <sup>1</sup>	1908. <sup>1</sup>	1909. <sup>1</sup>	1910. <sup>1</sup>	1911. <sup>1</sup>
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## NUMBER AND AREA OF ACCEPTED APPLICATIONS DURING YEAR.

Number	2	45	37	201	91	88	122	58
Area in Acres	6	106	104	149	131	189	148	99

## NUMBER AND AREA OF BLOCKS OCCUPIED AT END OF YEAR.

Number	7	211	229	401	387	408 <sup>1</sup>	440	388
Area in Acres	31	333	393	489	537	667	719	722

1. For financial year ended 30th June.

During the years 1907 to 1911 residential blocks on the goldfields were made available as workingmen's blocks, instead of under residential lease, as before.

8. **Tasmania.**—The principles of closer settlement were not introduced into Tasmania until the Closer Settlement Act of 1906 was passed. Under this Act, which was amended in 1908, power is given to the Minister for Lands, on the recommendation of the Closer Settlement Board, to purchase by agreement private land in any part of Tasmania for the purpose of closer settlement, and also to deal with and dispose of any unoccupied Crown land for the same purpose.

(i.) *Disposal of Land.* Lands so bought under the Act are subdivided into farm allotments of a suitable size—not exceeding £1500 in value—and are disposed of by way of lease for ninety-nine years. The rental is determined by the Board at a rate not exceeding 5 per cent. per annum on the capital value of the land. Any lessee who has fulfilled the conditions under the Act may, after the expiration of ten years of the term of the lease, purchase the land leased to him. Under the Amendment Act of 1908 the Minister is authorised to lease any allotment of land exceeding £1500, but not exceeding £4000 in value, exclusive of buildings.

A lessee must improve his holding to a value equal to  $2\frac{1}{2}$  per cent. on the capital value of the land in each of the first ten years of the term of his lease, and he must, within two years of the date of the lease, personally reside on his allotment during at least eight months of each of the following nine years.

(ii.) *Advances to Settlers.* The total advance by the Government in aid of the cost of effecting improvements to any one lessee must not exceed one-fifth of the capital value of such lessee allotment, and must not exceed pound for pound the sum expended by him in fencing and building. Such advances must be repaid, together with interest at 5 per cent., in equal half-yearly instalments.

(iii.) *Special Sales.* The fee-simple of land acquired may be disposed of by sale on the recommendation of the Board as sites for churches, public halls, dairy factories, fruit-preserving factories, mills, or creameries. The area sold may not exceed one acre in the case of a church or public hall, or five acres in other cases.

(iv.) *Areas Acquired and Selected.* Up to the 30th June, 1911, six areas, viz., Cheshunt, Mount Pleasant, Forester, Isandula, Brinktop and Frogmore had been opened up for closer settlement. Particulars are given in the following statement:—

**TASMANIA.—CLOSER SETTLEMENT, 1907 to 1911.**

Year.	Number of Farms made Available.	Number of Farms Allotted.	Area of Farms Allotted.	Rental of Farms Allotted.	Total Area Purchased.
			Acres.	£	Acres.
1907 ...	61	54	10,365	1,923	13,397
1908 ...	28	26	8,191	634	11,780
1909 ...	49	45	9,117	789	7,902
1910 ...	9	15	1,872	539	1,362
1911 ...	...	...	...	...	...
Total ...	147	140	29,545	3,885	34,441

The total purchase-money paid by the Government up to the 30th June, 1911, was £98,142.

## § 9. Occupation of Crown Lands under Leases and Licenses Issued by Mines Departments.

1. *Introduction.*—Leases and licenses for the occupation of Crown lands for mining and other purposes are issued by the Mines Departments in all the States. Such leases and licenses may be issued with respect to all Crown lands, whether otherwise unoccupied or whether occupied also under leases and licenses issued by the Lands Departments. Certain Crown lands, such as reserves, etc., are, however, subject to special conditions.

(i.) *Mining on Private Lands.* Certain of the Crown lands of the several States have been alienated from time to time, subject to various reservations in respect of gold and other minerals which might afterwards be found therein. Other lands have been alienated without such reservation, but as the mineral gold does not pass from the Crown unless by express conveyance, it has remained the property of the State on all alienated lands. All lands alienated or in process of alienation are open to mining for gold; but to mining for other minerals, those lands only are open in respect of which the rights are reserved in the grants. There are, however, generally certain reservations, such as those with reference to town or village lands and lands which have been built on or are used for special purposes. The working of minerals on private lands is regulated in the several States either by special Acts or by special provisions of the Acts relating to mining.

(ii.) *Leases and Licenses Issued and Total Areas of Crown Lands Occupied, 1901 to 1910.* The following tables shew the total areas of Crown lands for which leases and licenses for mining purposes were issued in each State during each year from 1901 to 1910 inclusive, and also the total areas of Crown lands occupied for mining purposes at the end of each year during the same period:—

## CROWN LANDS, LEASES AND LICENSES FOR MINING PURPOSES, 1901 to 1910.

Particulars.	N.S.W.	Victoria. <sup>1</sup>	Qld. <sup>2</sup>	S. Aust. <sup>3</sup>	W. Aust.	Tas.	Owlth.
AREAS FOR WHICH LEASES AND LICENSES ISSUED.							
1901 ...	Acres. 50,349	Acres. ...	Acres. 55,698	Acres. 93,985	Acres. 37,593	Acres. 18,125	Acres. 255,750
1902 ...	46,017	58,376	60,172	84,488	54,473	13,932	326,458
1903 ...	40,111	46,909	81,970	762,225	75,012	11,918	1,018,145
1904 ...	34,308	38,287	40,876	100,600	49,646	11,859	275,576
1905 ...	64,593	45,845	17,373	102,154	55,757	8,964	294,686
1906 ...	27,164	84,720	25,490	170,260	41,443	19,415	368,492
1907 ...	96,159	67,048	25,333	136,312	51,514	31,255	407,621
1908 ...	81,418	42,716	35,834	69,202	57,093	20,546	306,809
1909 ...	72,696	36,114	43,591	49,135	55,133	20,414	277,083
1910 ...	31,674	38,655	41,687	216,273	87,429	24,173	439,891

## TOTAL AREA OCCUPIED AT END OF YEAR.

1901 ...	134,209	Not available.	124,182	14,140	66,682	50,362	389,575
1902 ...	131,690		143,861	103,334	115,703	47,692	542,280
1903 ...	127,514		163,792	793,583	122,919	45,298	1,233,106
1904 ...	124,773		111,180	130,281	111,439	44,341	532,014
1905 ...	147,074		102,952	128,045	116,390	45,075	539,536
1906 ...	134,723		112,013	213,492	100,670	53,122	624,020
1907 ...	183,916		123,321	170,204	117,361	79,163	673,965
1908 ...	218,931		140,735	100,387	130,970	56,693	647,716
1909 ...	236,265		147,010	84,293	128,129	55,819	651,516
1910 ...	235,235	136,710	164,737	197,714	164,963	57,908	957,267

1. Including private lands, leases, and water right licenses only. 2. Exclusive of lands held under miners' rights only, amounting in 1908 to approximately 27,500 acres. 3. Exclusive of miners' rights. 4. Excluding Victoria, except for 1910.

The increase in the area held during 1903 is due to the unusually large number of search licenses issued in South Australia during the year, no less than 466 being registered with areas varying from 640 to 3200 acres each.

2. **New South Wales.** Under the provisions of the Mining Act 1906 and the regulations made thereunder, Crown lands may be occupied for mining or other purposes by virtue of (i.) miners' rights; (ii.) business licenses; (iii.) authorities to prospect; or (iv.) leases.

(i.) *Miners' Rights.* A miner's right may be issued for any term not less than six months and not exceeding twenty years from the date of issue, at a fee calculated at the rate of two shillings and sixpence for every half-year of the term. The holder is entitled to take possession of and exclusively occupy for mining purposes Crown lands not expressly exempted from such occupation. Areas so occupied are styled *tenements*, which are divided into nine classes, viz.:—(a) prospecting areas; (b) dams or reservoirs; (c) roads; (d) claims; (e) races; (f) machinery areas; (g) tramways; (h) water rights; and (i) tunnel sites. Any holder of a miner's right may occupy one tenement of any or each of the foregoing classes, but for every additional tenement of the same class he must hold and additional miner's right. The holder of a miner's right may, in addition to the above, occupy a residence area not exceeding one-quarter acre within the boundaries of a town or village, or two acres outside such boundaries.

(ii.) *Business Licenses.* A business license may be issued for any term not less than six months and not exceeding twenty years at a fee calculated at the rate of ten shillings for every half-year of the term. It entitles the holder to occupy as a business area not

more than one-quarter acre within the boundaries of a town or village, or one acre outside such boundaries.

(iii.) *Authorities to Prospect.* Under the Mining Act 1906, the Minister for Mines may grant to the holder of a miner's right an authority to prospect upon any area of Crown lands, whether exempted from ordinary occupation under a miner's right or not. These authorities are protective titles during prospecting operations only, and do not authorise mining.

(iv.) *Leases.* The Governor may grant leases of Crown lands for (a) mining, (b) mining purposes, or (c) dredging.

(a) *Mining Leases.* These leases may be either *gold-mining leases*, for which the rental is at the rate of five shillings per acre per annum, the maximum area which may be demised being twenty-five acres; *mineral leases* (other than coal or shale), for which the rental is at the rate of five shilling per acre per annum, the maximum area being eighty acres; *coal or shale leases*, for which the rental is at the rate of one shilling per acre per annum, with a royalty of sixpence per ton on all shale or large coal, and threepence per ton on all small coal raised, the maximum area being 640 acres. *Special leases* may be granted for gold or minerals, other than shale or coal, if by reason of unusual circumstances the Minister is of the opinion that it is necessary that an area in excess of the limit prescribed for ordinary leases should be leased.

(b) *Leases for Mining Purposes* are granted for the surface of the land and to a limited depth below the surface. Such leases do not authorise mining on the land, but are for such purposes as the construction of dams and reservoirs, tramways, buildings, and machinery.

(c) *Dredging Leases* may be granted for the purpose of mining for gold or any other mineral by dredging, pumping, sluicing, etc., on any Crown lands forming the bed of any river or other suitable land. The rent is two shillings and sixpence per acre per annum, and a royalty of 1 per cent. on the value of all gold and other minerals won must be paid to the Crown. Labour and capital expenditure conditions are attached to dredging leases.

(v.) *Particulars of Leases and Licenses Issued, 1910.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1910:—

#### NEW SOUTH WALES.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT DURING YEAR 1910.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases—</i>	Mining Act 1874 & amending Acts	To mine for—	Acres.
		Minerals other than coal ...	40
		Coal ...	1,280
	Mining Act 1906 ...	Gold ...	4,853
	" " ...	Minerals other than coal ...	8,380
	" " ...	Coal ...	6,462
		Leases (mining purposes) ...	662
	Gold & Mineral Dredging Act 1899	Gold ...	32
		Minerals other than gold ...	...
	Mining Act 1906 (Dredging) ...	Gold ...	1,527
<i>Licenses—</i> <i>Other forms of</i> <i>occupancy—</i>	Mining Act 1874 (section 28) ...	Minerals other than gold ...	331
	Mining Act 1874 & amending Acts	Coal and shale ...	...
	Mining Act 1906 ...	Sites for dams, machinery, etc.	...
		Authorities to prospect ...	8,107
<b>Total ...</b>	—	—	<b>31,674</b>

It may be remarked that the Mining Act 1874, has now been repealed, so that no further authorities will be issued under that Act.

(vi.) *Leases and Licenses Issued and Areas Occupied, 1901 to 1910.*—The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total areas of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1906 to 1910, inclusive :—

### NEW SOUTH WALES.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT, 1901 TO 1910.

Purposes for which Issued or Occupied.	1901.	1905.	1906.	1907.	1908.	1909.	1910.
LEASES AND LICENSES ISSUED. —							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining ...	2,272	1,664	1,776	1,463	4,131	5,243	6,412
Mining for other minerals	47,990	62,844	25,018	93,796	37,237	41,008	16,493
Authorities to prospect...	...	...	...	...	38,890	25,481	8,107
For other purposes ...	87	85	370	900	1,160	964	662
Total ...	50,349	64,593	27,164	96,159	81,418	72,696	31,674
TOTAL AREAS OCCUPIED.							
Gold mining ...	6,942	5,754	5,963	5,669	11,456	16,079	18,917
Mining for other minerals	126,885	140,555	127,749	176,558	192,178	190,153	199,497
Authorities to prospect...	...	...	...	...	13,239	28,287	12,441
For other purposes ...	382	765	1,011	1,689	2,058	1,746	4,380
Total ...	134,209	147,074	134,723	183,916	218,931	236,265	235,235

3. **Victoria.**—Leases of Crown lands for mining and auxiliary purposes in this State are issued by the department of Mines and Forests under the Mines Act 1890 to 1907. Miners' rights are issued by the Treasury under the authority of the same Acts.

(i.) *Mining Leases.* These are of three kinds—(a) Gold-mining leases; (b) mineral leases; and (c) dredging leases. (a) *Gold-mining Leases* are granted for a term of fifteen years in such areas as the Minister may recommend. The annual rent is two shillings and sixpence an acre. (b) *Mineral Leases* are granted for a term of 15 years, the maximum area being 640 acres. The annual rent varies from one shilling to £1 per acre. (c) *Dredging Leases* are issued upon the recommendation of the Sludge Abatement Board and on the approval of the Minister. The annual rent is five shillings an acre.

(ii.) *Special Licenses.* Special licenses are also granted by the Department of Mines and Forests. (a) *Searching Licenses* are granted to search for minerals over Crown lands for a term of three months at a minimum rent of £1. (b) *Tailings Licenses* are issued over tailings, which have become the property of the Crown, for a term of five years at a rent of one penny per 100 cubic yards, the minimum rent being ten shillings. (c) *Water-right Licenses* are issued, to divert water by cutting races, etc., over Crown lands, for a term of fifteen years, at a rent fixed according to the length of race, the quantity of water diverted, and the size of the reservoir.

(iii.) *Miners' Rights, Business Licenses, and Residence Areas.* Miners' rights are issued by the Treasury Department upon payment of a fee of two shillings and sixpence,

and are available for a period of twelve months. The holder is entitled to take possession for mining purposes of Crown lands, not otherwise exempted, in any mining district. Upon registration and payment of the prescribed fees, the holder of a miner's right may occupy not more than one acre of Crown lands on any goldfield as a business or residence area.

Licenses of auriferous lands not for mining purposes may be issued by the Lands Department. (§ 7, 3 iv.)

(iv.) *Leases and Licenses Issued and Areas Occupied for Mining.* Particulars of leases and licenses for mining purposes of Crown lands alone are not available, the official returns including also private lands. During the year 1910 the number of mining leases, licenses, etc., issued was 450, covering an area of 38,655 acres; the rent, fees, etc., received amounted to £2219. No particulars are available as to the total area of either Crown or private lands occupied for mining purposes.

4. **Queensland.**—The occupation of the Crown lands for mining purposes in this State is regulated by the Mining Acts 1898 to 1902. Under these Acts the Department of Mines is authorised to issue—(i.) Miners' rights; (ii.) mining leases; (iii.) coal-mining leases and licenses; and (iv.) miners' homestead leases.

(i.) *Miners' Rights.* The foundation of title under a miner's right is prior appropriation, and the permanency of any such title depends upon compliance by the occupier with certain prescribed conditions of use and working. The ground occupied under a miner's right is known as a "claim," which term may include an area taken up for purposes auxiliary to the actual operation of mining, such as machine areas. Water rights and residence areas do not come within the definition of "claim," being licenses which may be granted or refused. The forfeiture of a claim on account of non-compliance with the prescribed conditions may be decreed by the Warden on the application of any holder of a miner's right. The forfeiture of water rights or of residence areas may be declared only by the Crown, who alone can challenge the title of the occupier.

(ii.) *Mining Leases.* These leases are divided into two classes—(a) Gold-mining leases, and (b) mineral leases. Both classes contain certain covenants as to rent, the employment of labour and other matters. Special leases may be granted for auxiliary purposes, such as constructing tramways, erecting buildings, cutting water-races, etc. (a) *Gold-mining Leases.* The maximum area is fifty acres, the term twenty-one years, renewable for a further term of like duration, and the annual rent is £1 an acre. (b) *Mineral Leases.* The maximum area is 160 acres (except for coal, as mentioned hereinafter), the term twenty-one years, renewable for a like period, and the annual rent is ten shillings an acre.

(iii.) *Coal-mining Leases and Licenses.* Mineral leases for coal may be granted for a term of twenty-one years at an annual rent of sixpence an acre, together with a royalty of threepence per ton of coal raised during the first ten years of the lease and of sixpence per ton during the remainder of the term. Special concessions may be granted to discoverers of payable seams of coal. Licenses to occupy not more than 640 acres may be granted to any person desiring to prospect Crown lands for coal upon payment of sixpence for every acre comprised in the application.

(iv.) *Miners' Homestead Leases.* These leases are issued to holders of miners' rights who reside on gold or mineral fields, for the purpose of residence or carrying on business, and range in area from one to eighty acres, in accordance with the proximity to a proclaimed township. The rent ranges from sixpence to five shillings an acre. In the case of homesteads situated outside the limits of a township, after thirty years' rent has been paid the rent ceases to be payable, and in lieu thereof the rent shall be one shilling, if demanded.



(v.) *Particulars of Leases and Licenses Issued, 1910.* The subjoined table gives particulars of the leases and licenses of Crown lands issued for mining purposes during the year 1910:—

**QUEENSLAND.—MINING LEASES AND LICENSES, 1910.**

Lease or License.	Mining Leases.				Miners' Homestead Leases.	Coal Prospecting Licenses.	Miscellaneous Rights & Licenses.
	To mine for gold	To mine for minerals other than gold	Tramways	Buildings and machinery	Residence, business, etc.	To prospect for coal	Mining, residence, etc.
Purpose for which issued							
Area in acres...	1,306	3,003	29	63	5,697	31,579	*25,000

\* Approximate.

(vi.) *Particulars of Areas Occupied, 1901 to 1910.* The following table shews the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901 and from 1906 to 1910 inclusive.

The particulars given are exclusive of miners' rights.

**QUEENSLAND.—LEASES AND LICENSES.**

Particulars.				1901.	1906.	1907.	1908.	1909.	1910.
* LEASES AND LICENSES ISSUED DURING YEAR.									
				Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	...	...	...	3,581	2,207	2,333	1,800	1,668	1,306
Mining for other minerals	...	...	...	7,142	10,998	7,598	5,004	2,878	3,105
For other purposes	...	...	...	44,975	12,285	15,402	29,030	39,045	37,276
Total	...	...	...	55,698	25,490	25,333	35,834	43,591	41,687
* TOTAL AREA OCCUPIED AT END OF YEAR.									
				Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	...	...	...	11,296	10,067	10,562	8,860	8,590	8,082
Mining for other minerals	...	...	...	23,113	28,897	33,021	27,691	20,292	25,188
For other purposes	...	...	...	89,773	73,049	79,738	104,184	118,128	131,467
Total	...	...	...	124,182	112,013	123,321	140,735	147,010	164,737

\* Exclusive of lands held under miners' rights only.

5. **South Australia.**—In this State leases and licenses for mining purposes are issued by the Department of Mines under the authority of the Mining Act 1893, as amended in 1900. Under these Acts mining and prospecting are permitted in virtue of (i.) miners' rights; (ii.) mining leases; (iii.) coal or oil leases; and (iv.) miscellaneous leases, and in addition occupation of Crown lands is permitted by virtue of (v.) business claims, and (vi.) occupation licenses.

(i.) *Miners' Rights.* These rights are issued for a period of one year upon payment of five shillings. The holder is authorised to prospect for any mineral or oil, and to peg out a claim in the prescribed manner on any Crown lands. Under the Amendment Act of 1900, special licenses to search, on specific mineral lands not exceeding five square miles in extent, may be granted for (a) precious stones; (b) mineral phosphates; (c) oil; and (d) rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State.

(ii.) *Mining Leases.* These leases are of two classes—(a) Gold leases and (b) mineral leases. (a) *Gold Leases* may be issued for a term not exceeding forty-two years to holders

of miners' rights at an annual rent of one shilling an acre. The maximum area which may be so leased is twenty acres. (b) *Mineral Leases* may be issued to holders of miners' rights for lands not comprised in a goldfield. The area leased may not exceed forty acres, nor the term forty-two years. The annual rent is one shilling an acre, together with a royalty of sixpence in the pound on the net profits.

(iii.) *Coal or Oil Leases.* These leases are issued to holders of miners' rights for Crown lands not comprised in goldfields. The maximum area is 640 acres, and the maximum term forty-two years. The rent and conditions are as prescribed. In addition to the rent a royalty of sixpence in the pound on the net profits must be paid.

(iv.) *Miscellaneous Leases.* Leases for any term not exceeding forty-two years may be granted to holders of miners' rights on the prescribed terms and conditions (a) for manufacturing or obtaining salt or gypsum; (b) as sites for smelting or mining works. The maximum area, if the land leased is on a water frontage, is twenty-one acres. A royalty of sixpence in the pound on the net profits must be paid.

(v.) *Business Claims.* Business licenses are granted on payment at the rate of ten shillings for six months, entitling the holder to peg out and occupy for business and residential purposes a claim not exceeding a quarter of an acre in extent, if within a township, or one acre on other lands.

(vi.) *Occupation Licenses.* Licenses are granted authorising the holder to occupy, for purposes of residence and cultivation, any Crown lands not exceeding half an acre in extent for a term of fourteen years at an annual rent not exceeding two shillings an acre.

(vii.) *Particulars of Leases and Licenses, 1910.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1910:—

### SOUTH AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY THE MINES DEPARTMENT DURING YEAR 1910.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
			Acres.
<i>Leases ...</i>	Mining Act 1893 ...	To mine for—	777
<i>Mineral claims</i>	...	Gold and other metals and miner's ls	4,407
<i>Licenses</i>	Mining Act Amendment Act 1900 ...	To search for "precious stones, mineral phosphates, oil, rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State"	196,300
<i>Other forms of occupancy</i>	Mining Act 1893 ...	—	14,789
Total	—	—	216,273

(viii.) *Leases and Licenses Issued and Areas Occupied, 1901 to 1910.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1906 to 1910 inclusive:—

### SOUTH AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 TO 1910.

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.
LEASES AND LICENSES ISSUED.*						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining ...	1,377	1,380	370	306	334	145
Mining for other minerals ...	92,587	168,875	135,897	68,896	48,799	216,128
For other purposes ...	21	5	45	...	2	...
Total ...	93,985	170,260	136,312	69,202	49,135	216,273

\* Exclusive of miners' rights.

## SOUTH AUSTRALIA.—LEASES AND LICENSES—(Continued.)

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.
TOTAL AREAS OCCUPIED.*						
Gold mining ... ..	14,140	10,171	7,952	2,490	2,374	1,353
Mining for other minerals ... ..	...	203,321	162,113	97,780	81,811	196,256
For other purposes ... ..	...	...	139	117	108	105
Total ... ..	14,140	213,492	170,204	100,387	84,293	197,714

\* Exclusive of miners' rights.

The following table shews the total area occupied (exclusive of miners' rights) at the end of the year 1910, classified according to the nature of the holding :—

## SOUTH AUSTRALIA.—TOTAL AREA HELD UNDER MINING ACTS, 1910.

Nature of Holding.	Number.	Area.	Nature of Holding.	Number.	Area.
		Acres.			Acres.
Mineral leases ... ..	293	14,999	Search licenses ... ..	139	144,460
Gold leases ... ..	70	1,304	Coal and oil claims ... ..	30	19,220
Gold dredging leases ... ..	1	34	Gold claims ... ..	6	15
Miscellaneous leases ... ..	41	7,584			
Mineral claims ... ..	301	9,993			
Occupation licenses ... ..	210	105	Total ... ..	1,091	197,714

6. **Western Australia.**—The issue of leases and licences by the Mines Department is regulated by the Mining Act 1904. Under this Act Crown lands may be occupied by virtue of (i.) Miners' rights; (ii.) mining leases; and (iii.) miners' homestead leases.

(i.) *Miners' Rights.* Any holder of a miner's right may take up and occupy ground, subject to the approval of the Warden, for the following purposes:—Prospecting for any minerals; claims, water rights, residence and business areas, and machinery, tailings, washing, or market garden areas. Lands may be occupied by the holder of a miner's right for the purpose of mining for alluvial gold without registration, the only restriction being that the occupier must peg out his holding according to the prescribed regulations.

(ii.) *Mining Leases.* These leases are granted for mining and auxiliary purposes, and are of three descriptions, viz.:—(a) Gold-mining leases; (b) mineral leases; and (c) coal leases. (a) *Gold-mining Leases.* The maximum area is twenty-four acres, except in the case of a mine which has already been worked and abandoned, is excessively wet, or requires costly appliances, when the maximum area is forty-eight acres. (b) *Mineral Leases.* The maximum area is forty-eight acres, except under the special circumstances referred to in the case of gold-mining leases, when the maximum area is ninety-six acres. (c) *Coal Leases.* The maximum area is 320 acres, but special leases of larger areas may be granted to the discoverer of a payable seam.

(iii.) *Miners' Homestead Leases.* These leases are granted for agricultural purposes on land within goldfields. The area is restricted to twenty acres, if within two miles of a township, and if beyond that distance to 500 acres. Improvement conditions are imposed.

(iv.) *Particulars of Leases and Licenses Issued, 1910.* The following table gives particulars of mining leases and licenses of Crown lands issued during 1910 :—

**WESTERN AUSTRALIA.—MINING LEASES AND LICENSES ISSUED, 1910.\***

Particulars.	Gold-Mining.	Minerals other than Gold.	Miners' Homesteads.	Miscellaneous.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.
Leases ...	16,487	3,835	3,766	42	24,130
Licenses ...	15,878	47,173	...	248	63,299

\* Exclusive of miners' rights.

(v.) *Particulars of Areas Occupied, 1901 to 1910.* The following table shews the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901, and from 1906 to 1910 inclusive :—

**WESTERN AUSTRALIA.—LEASES AND LICENSES**

ISSUED BY MINES DEPARTMENT, 1901 TO 1910.

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.
<b>LEASES AND LICENSES ISSUED DURING YEAR.*</b>						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining ...	17,454	28,572	28,050	26,898	32,092	32,365
Mining for other minerals ...	19,281	9,787	15,985	22,293	14,843	51,008
For other purposes ...	858	3,084	7,479	7,902	8,198	4,056
Total ...	37,593	41,443	51,514	57,093	55,133	87,429
<b>TOTAL AREA OCCUPIED AT END OF YEAR.*</b>						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining ...	40,525	48,398	46,374	40,591	41,521	44,157
Mining for other minerals ...	14,091	36,019	41,470	55,244	45,229	78,838
For other purposes ...	12,066	26,253	29,517	35,135	41,379	41,968
Total ...	66,682	110,670	117,361	130,970	128,129	164,963

\* Exclusive of miners' rights.

7. *Tasmania.*—Under the provisions of the Mining Act 1905, Crown lands in this State may be occupied for mining and auxiliary purposes by virtue of (i.) prospectors' licenses; (ii.) miners' rights; (iii.) mining leases; and (iv.) miscellaneous licenses. Business and residence licenses within mining areas may be issued by the Lands Department. (See § 7, 8 iv.)

(i.) *Prospectors' Licenses.* These licenses are granted for the calendar year in which they are applied for, upon payment of the sum of ten shillings if applied for before the 30th June, or five shillings if after that date. They confer the right to prospect upon prescribed Crown lands, and any discoveries made may be protected in the prescribed manner.

(ii.) *Miners' Rights.* These rights are also issued each year upon payment of five shillings if applied for before the 30th June, or of two shillings and sixpence if after that date. They confer the right to occupy specified Crown lands and to mine thereon.

(iii.) *Mining Leases.* Mining leases are of three kinds—(a) gold-mining leases; (b) mineral leases; and (c) miscellaneous leases. (a) *Gold-mining Leases* are granted for a term not exceeding twenty-one years at an annual rent of £1 an acre. The maximum area which may be so leased is forty acres. The lessee has the exclusive right to mine for gold and other minerals on the land demised. (b) *Mineral Leases* are issued for mining for minerals other than gold on areas not exceeding eighty acres for a term of not more than twenty-one years, at an annual rent of five shillings an acre. Leases to mine for coal, shale, slate, freestone, or limestone may be issued for areas not exceeding 320 acres at an annual rent of two shillings and sixpence an acre. (c) *Miscellaneous Leases.* The Minister may grant leases for mining purposes, for a term not exceeding ten years, of the bed or banks of any river flowing through Crown lands, at a rent of five shillings an acre. The area leased may not exceed forty chains in length by five chains on either side from the centre of the river. Special leases may be granted by the Governor upon resolutions assenting thereto passed by both Houses of Parliament.

(iv.) *Miscellaneous Licenses.* Licenses granting easements for various purposes may be issued, for a term not exceeding twenty-one years, to persons holding mining leases or miners' rights, for the more advantageous working of the land occupied.

(v.) *Particulars of Leases and Licenses Issued, 1910.* The following table shews particulars of leases and licenses of Crown lands, exclusive of prospectors' licenses and miners' rights, issued by the Mines Department during the year 1910:—

### TASMANIA.—LEASES AND LICENSES

ISSUED BY THE MINES DEPARTMENT DURING 1910.<sup>1</sup>

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases—</i>		To mine for—	Acres.
1 ...	The Mining Act 1905 ...	Asbestos ...	20
1 ...	" " ...	Barite ...	80
6 ...	" " ...	Coal ...	985
169 ...	" " ...	Copper ...	8,569
38 ...	" " ...	Gold ...	448
6 ...	" " ...	Iron ...	230
1 ...	" " ...	Limestone ...	10
111 ...	" " ...	Minerals ...	5,740
3 ...	" " ...	Pyrites ...	200
25 ...	" " ...	Silver lead ...	1,383
5 ...	" " ...	Shale ...	1,107
136 ...	" " ...	Tin ...	5,204
5 ...	" " ...	Wolfram ...	129
<i>Licenses—</i>			
1 ...	" " ...	Machinery sites...	7
7 ...	" " ...	Mining easements ...	43
2 ...	" " ...	Dredging claims ...	12
31 ...	" " ...	Dam sites and water rights	6
Total 548 ...	—	—	24,173

1. Exclusive of prospectors' licenses and miners' rights, which are issued by officers in different districts throughout the State, and as to which particulars are not available.

(vi.) *Leases and Licenses Issued and Areas Occupied, 1901 to 1910.* The following tables give particulars of the areas of Crown lands for which leases and licenses (exclusive of prospectors' licenses and miners' rights) were issued during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1906 to 1910 inclusive:—

## TASMANIA.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT, 1901 TO 1910.\*

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.
LEASES AND LICENSES ISSUED.*						
Gold mining ...	Acres. 1,067	Acres. 459	Acres. 1,056	Acres. 946	Acres. 998	Acres. 448
Mining for other minerals ...	17,058	18,956	29,188	19,137	19,114	23,669
For other purposes ...	—	—	1,011	463	302	56
Total ...	18,125	19,415	31,255	20,546	20,414	24,173
TOTAL AREAS OCCUPIED.*						
Gold mining ...	3,394	1,836	2,671	1,344	1,265	1,159
Mining for other minerals ...	46,968	49,061	73,009	52,844	52,939	55,050
For other purposes ...	—	2,225	3,483	2,505	1,615	1,399
Total ...	50,362	53,122	79,163	56,693	55,819	57,908

\* See note to preceding table.

## § 10. Resumption by Crown of Alienated Lands.

1. **General.**—Under various Acts, alienated lands may be compulsorily resumed by the Crown in the several States for certain purposes, generally connected with works of a public nature. Resumptions for closer settlement purposes have already been referred to (see § 8, above). In most of the States there are Lands Clauses or similar Acts providing the machinery, and indicating the procedure to be adopted in assessing the compensation to be paid by the Crown to private owners in cases where the parties have failed to agree as to the amount to be paid. The provisions of these Acts are generally incorporated in the special Acts specifying the purposes for which alienated lands may be resumed. Lands leased for pastoral purposes may generally be resumed by the Crown on short notice. The lessee is ordinarily entitled to compensation for land resumed, for loss or depreciation in value of the lease caused by such resumption, and for improvements.

(a) *New South Wales.* Alienated lands may be recovered by the Crown for authorised works and certain public purposes under the provisions of the Public Works Act 1900, and in other cases may be acquired by the Crown by purchase, gift, or surrender under Executive authority. Alienated lands required for public roads may be resumed under the Public Roads Act 1902, and if containing gold may be resumed for mining under Section 72 of the Mining Act 1906. Lands dedicated or granted by the Crown for public purposes may be resumed under Section 105 of the Crown Lands Act 1884, Section 41 of the Crown Lands Act 1889, and Section 1 of the Public Trusts Act 1897. Surrender and exchange of lands alienated or in process of alienation may be carried out under Section 47 of the Crown Lands Act 1895.

(b) *Victoria.* In Victoria lands may be resumed in accordance with the provisions of the Lands Compensation Act 1890, the Public Works Act 1890, the Railways Acts, the Land Act 1901, the Local Government Act 1903, the Water Act 1905, the Vacant Unclaimed Lands Act 1906, and the Forests Act 1907.

(c) *Queensland.* In this State alienated lands may be resumed under the provisions of the Public Works Land Resumption Act 1906, for any of the purposes specified in section 4 of that Act.

(d) *South Australia.* In this State the principal Acts under which land is re-purchased for public works are the Railways Commissioners Act 1887, the Water Conservations Acts 1886, 1889, and 1900, the Waterworks Act 1882, and the Sewers Act 1878.

(e) *Western Australia.* In Western Australia private lands may be resumed under the provisions of the Land Act 1898, the Roads Act 1902, and the Public Works Act 1902.

(f) *Tasmania.* In the greatest number of cases private lands have been resumed in this State for the purpose of roads by agreement under the Lands Vesting Act 1894 and the Roads Acts, which were to a large extent repealed and consolidated by the Local Government Act 1906. In case of the owners failing to agree as to price, the land is acquired under the Lands Clauses Act 1857, incorporated in the Public Works and the Crown Land Acts. The Lands Resumption Acts 1891 and 1892 provide for the compulsory acquisition of land without waiting for the usual formalities. Under that Act a notification may be given to the owner that the land is required; after the expiration of thirty days the land may be resumed by notification in the *Gazette*, the amount of purchase-money being afterwards decided by arbitration, as provided by the Lands Clauses Act. A Bill amending and consolidating the Land for Public Purposes Act 1884, and the Lands Resumption Acts 1891 and 1892, was passed by the House of Assembly in August, 1910.

2. **Areas Resumed, 1901 to 1910.**—The subjoined table shews, so far as particulars are available, the areas of private lands resumed, exclusive of resumptions for closer settlement purposes, in each State during each year from 1901 to 1910 inclusive:—

#### AREAS OF PRIVATE LANDS RESUMED BY THE CROWN

(EXCLUSIVE OF RESUMPTIONS FOR CLOSER SETTLEMENT), 1901 TO 1910.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.†
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ...	7,864	52	26	†	91	120	8,153
1902 ...	8,392	18	2	†	30	150	8,592
1903 ...	10,275	2,787	...	†	...	160	13,222
1904 ...	6,591	3,337	...	†	...	210	10,138
1905 ...	6,173	2,653	...	†	...	184	9,010
1906 ...	20,875	665	...	†	...	200	21,740
1907 ...	10,511	1,930	76	†	...	252	12,769
1908 ...	6,041	†	1,346	†	2,457	16	†
1909 ...	3,020	†	122	†	†	212	†
1910 ...	3,878	†	92	†	†	544	†

\* Exclusive of resumptions for railway purposes, which for the years 1901 to 1906, inclusive, amounted to 13,081 acres. † Not available. ‡ Exclusive of South Australia.

### § 11. Alienation and Occupation of Crown Lands in the Several States.

1. **Introduction.**—The tables given in the previous parts of this section shew separately the areas alienated, in process of alienation, and occupied under various tenures in the several States. The tables given below shew collectively the general condition of the public estate in each State, having regard to (a) the area alienated absolutely, which includes free grants, sales, and conditional purchases for which grants have been issued, the conditions having been complied with; (b) the area in process of alienation, comprising holdings for which the fee-simple has not yet been alienated, but which

are in process of sale under systems of deferred payments; (c) the area occupied under all descriptions of leases and licenses; and (d) the area unoccupied, which, ordinarily, includes roads, permanent reserves, forests, etc. In some cases, however, lands which are permanently reserved from alienation are occupied under leases and licenses, so that in such cases the areas reserved are comprised in class (c) and not in class (d). Particulars of leases and licenses of reserved areas, as distinguished from leases and licenses of other lands, are not available. It should be observed that in many cases lands occupied under leases or licenses for pastoral purposes are held on short tenures only, and could thus be made available for settlement practically, whenever required.

**2. New South Wales.**—The total area of the State of New South Wales is 198,638,080 acres, of which on the 30th June, 1911, 38,741,736 acres, or nearly one-fifth were alienated absolutely; 16,210,185 acres, or about one-twelfth, were in process of alienation; 123,223,559 acres, or about three-fifths, were occupied under Lands Department, Western Land Board, or Mines Department leases and licenses; and the remaining 20,462,600 acres, or about one-tenth, were unoccupied. The next table shows the areas alienated, in process of alienation, held under leases and licenses, and unoccupied, in 1901 and from 1908 to 1911.

During the year 1910-11, a total area of 954,627 acres became available for conditional purchase, conditional lease, conditional purchase lease, homestead selection, and settlement lease, special conditional purchase lease, and additional holdings. Of this area, 380,965 acres were made available for additional holdings only, so as to enable selectors with insufficient areas to increase their holdings, and 130,952 acres were made available for closer settlement purchase.

**NEW SOUTH WALES.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 to 1910.‡**

Particulars.	Area in Acres.				
	1901.	1907-8.	1908-9.	1909-10.	1910-11.
<b>1. Alienated.</b>					
Granted and sold by private tender and public auction, at prices ranging from five to twenty shillings per acre, prior to 1862 ...	7,146,579	7,146,579	7,146,579	7,146,579	7,146,579
Sold by auction and other sales, 1862 to date ...	14,638,888	14,879,236	14,889,219	14,897,415	14,903,655
Conditionally sold, 1862 to date ...	4,212,189	11,659,869	12,848,166	13,928,053	14,560,791
Granted under Volunteer Land Regulations, 1867 to date ...	168,545	169,614	169,764	170,114	170,650
Granted for public and religious purposes ...	241,968	226,308	228,275	228,712	230,907
Homestead grants ...	35,385	1,385,415	1,501,738	1,628,176	1,729,154
<b>Total area alienated ...</b>	<b>26,443,554</b>	<b>35,467,021</b>	<b>36,783,741</b>	<b>*37,999,049</b>	<b>†38,741,736</b>
<b>2. In Process of Alienation.</b>					
Under system of deferred payments ...	20,044,703	14,868,837	14,163,478	14,362,463	15,614,036
Under system of homestead selections (including leases converted, but excluding grants issued) ...	1,550,985	771,561	742,336	622,903	‡
Closer settlement purchases ...	...	157,649	312,075	475,553	596,149
<b>Total area in process of alienation ...</b>	<b>21,595,688</b>	<b>15,798,047</b>	<b>15,217,891</b>	<b>15,460,919</b>	<b>16,210,185</b>
<b>3. Held under Leases and Licenses.</b>					
Total under Lands Department and Western Land Board ...	126,921,161	128,931,647	128,179,127	125,491,878	122,998,519
Mineral and auriferous leases and licenses (Mines Department) ...	134,209	‡218,931	‡211,741	‡241,752	‡225,040
<b>Total leases under all Government Departments ...</b>	<b>127,055,370</b>	<b>129,150,578</b>	<b>128,390,868</b>	<b>125,733,630</b>	<b>123,223,559</b>
<b>4. Unoccupied ...</b>	<b>23,543,468</b>	<b>18,222,434</b>	<b>18,245,580</b>	<b>19,444,482</b>	<b>20,462,600</b>

Area of State—198,638,080 acres.

§ The figures for 1901 are up to the 31st December, while for the other years given they are up to the 30th June. \* Includes 495,052 acres acquired for closer settlement. † Inclusive of alienated area within the Commonwealth Territory, and acquisitions under Closer Settlement Acts. ‡ Now included under Homestead grants. ‡ Up to 31st December.



3. **Victoria.**—The total area of the State of Victoria is 56,245,760 acres, of which 23,568,070 acres, or about three-eighths, had been alienated absolutely up to the end of the year 1910; 5,869,185 acres, or about one-eleventh, were in process of alienation under deferred payments; and 15,433,875 acres were occupied under leases and licenses, while the remaining 11,374,630 acres were unoccupied. The following table shews the areas alienated and in process of alienation, together with the areas reserved, leased, and available for occupation at the end of the year 1901 and from 1906 to 1910:—

**VICTORIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 to 1910.**

Particulars.	Area in Acres					
	1901.	1906.	1907.	1908.	1909.	1910.
1. <i>Alienated</i> ... ..	20,066,875	22,816,538	22,940,143	23,074,634	23,107,613	23,568,070
2. <i>In Process of Alienation—</i>						
<i>Exclusive of Mallee, etc.</i> ... ..	3,587,668	1,922,654	1,897,796	1,941,474	2,017,219	2,079,977
<i>Mallee Lands</i> ... ..	87,606	1,948,460	2,372,316	2,728,595	3,077,067	3,493,952
<i>Under Closer Settlement Acts</i> ... ..	114,691	114,691	164,561	174,812	221,565	255,978
<i>Village Settlements</i> ... ..	55,077	54,404	52,673	45,140	42,645	39,278
<i>Total</i> ... ..	3,730,351	4,040,209	4,488,346	4,890,021	5,358,496	5,869,185
3. <i>Leases and Licenses Held—</i>						
<i>Under Lands Department</i> ... ..	17,110,709	16,683,992	16,565,917	15,955,346	16,384,395	15,433,875
<i>Under Mines Department*</i> ... ..	...	...	...	...	...	...
4. <i>Unoccupied Crown Lands.</i> ... ..	15,337,825	12,705,021	12,251,354	12,325,759	11,395,256	11,374,630

Total area of State—56,245,760 acres.

\* Not available.

Crown lands in Victoria include roads, 1,692,314 acres; water reserves, 284,265 acres; agricultural colleges, etc., 155,483 acres; State forests and timber reserves (now under Forests Act 1907), 3,936,746 acres; reserves in the Mallee, 397,881 acres; unsold land in towns, etc., 2,192,243 acres; and other reserves, 295,525 acres. The Crown Lands Reserve Act was passed in 1910; it revokes permanent reserves for public purposes, in order that the areas totalling 1,591,500 acres may be dealt with as unoccupied Crown lands. Of these lands 1,195,000 acres are mallee country situated in the county of Millewa, while the remainder, 396,500 acres, are situated in the counties of Dargo and Croajingolong in the eastern part of the State.

4. **Queensland.**—The total area of this State is 429,120,000 acres, of which, on the 31st December, 1910, 15,460,352 acres, or about one-twenty-eighth, were alienated absolutely; 7,971,842 acres, or about one-fifty-fourth, were in process of alienation; 295,385,129, or about nine-thirteenths, were occupied under leases and licenses, the remaining 110,303,177 acres being unoccupied. From 1901 to 1910 the area alienated absolutely increased by 1,925,884 acres or  $14\frac{1}{2}$  per cent., and the area in process of alienation by 5,179,678 acres or  $185\frac{1}{2}$  per cent.

The following table shews the area alienated absolutely, the area in process of alienation, and the area held under various forms of lease and license at the end of the year 1901 and from 1906 to 1910:—

## QUEENSLAND.—ALIENATION AND OCCUPATION OF CROWN LANDS,

1901 to 1910.

Particulars.	Area in Acres.					
	1901.	1906.	1907.	1908.	1909.	1910.
<b>1. Alienated Absolutely—</b>						
By Purchase ... ..	13,462,304	14,504,707	14,842,621	15,026,180	15,214,148	15,377,626
Without Payment ... ..	71,164	80,853	81,796	82,259	82,540	82,726
<b>Total ... ..</b>	<b>13,533,468</b>	<b>14,585,560</b>	<b>14,924,417</b>	<b>15,108,439</b>	<b>15,296,688</b>	<b>15,460,352</b>
<b>2. In Process of Alienation ... ..</b>	<b>2,791,664</b>	<b>3,737,083</b>	<b>4,778,908</b>	<b>6,200,960</b>	<b>6,806,467</b>	<b>7,971,342</b>
<b>3. Occupied under Leases and Licenses—</b>						
Runs Settled Districts ... ..	176,000	182,384,400	192,346,480	201,872,640	209,143,600	218,142,640
Unsettled Districts ... ..	222,553,760	39,354,240	43,138,000	40,039,040	38,062,240	37,894,960
Occupation Licenses ... ..	35,103,600	24,961,495	28,232,332	30,888,705	35,250,197	38,460,439
Grazing Farms and Homesteads ... ..	21,793,242	252,603	275,621	258,208	273,102	235,150
Scrub Selections ... ..	272,946	...	*92,000	*100,000	*115,000	*467,000
Timber Licenses ... ..	...	3,789	11,446	8,037	32,722	57,782
Leases Special Purposes ... ..	249	112,013	123,321	140,735	147,010	187,158
Under Mines Department ... ..	124,182	...	...	...	...	...
<b>Total ... ..</b>	<b>280,023,979</b>	<b>247,068,540</b>	<b>264,219,200</b>	<b>273,307,365</b>	<b>283,023,871</b>	<b>295,385,129</b>
<b>4. Unoccupied ... ..</b>	<b>132,770,889</b>	<b>163,728,817</b>	<b>145,197,475</b>	<b>134,503,266</b>	<b>123,992,974</b>	<b>110,303,177</b>

Total area of State—429,120,000 acres.

\* Approximate; the area under timber licenses is constantly fluctuating.

The area open for selection (as distinguished from occupation for purely pastoral or special purposes) under every mode at the beginning of the year 1910 was 4,311,659 acres, and the area opened during the year was 8,600,600 acres, while the area withdrawn was 784,584 acres. The area selected was 5,889,019 acres, and the area remaining open at the end of the year was 6,235,656 acres. The number of grazing selections was 425 as against 420 in the previous year, and their gross area 3,883,830 acres, as against 4,623,803 acres.

**5. South Australia.**—The area of the State of South Australia south of lat. 26° S. is 243,244,800 acres. In South Australia, at the end of the year 1910, there were 9,268,789 acres, or about one one-twenty-sixth, alienated absolutely; 1,463,038 acres, or about one-one-hundred and sixty-sixth were in process of alienation; 111,513,856 acres, or about three-sevenths, were occupied under leases and licenses; while the remaining 120,999,117 acres were unoccupied. The subjoined table shews for South Australia the area of land alienated absolutely, and in process of alienation under deferred payments, and the area held under different forms of leases:—

**SOUTH AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 to 1910.**

Particulars.	Area in Acres.					
	1901.	1906.	1907.	1908.	1909.	1910.
<b>1. Alienated—</b>						
Sold ... ..	7,413,510	8,065,792	8,194,032	8,341,566	8,598,751	9,146,396
Granted for Public Purposes ... ..	121,613	121,829	122,027	122,065	72,123	132,393
<b>Total ... ..</b>	<b>7,535,123</b>	<b>8,187,621</b>	<b>8,316,059</b>	<b>8,463,631</b>	<b>8,670,874</b>	<b>9,268,789</b>
<b>2. In Process of Alienation—</b>	<b>553,774</b>	<b>759,337</b>	<b>1,134,424</b>	<b>1,195,550</b>	<b>1,297,277</b>	<b>1,463,038</b>
<b>3. Held under Lease and License—</b>						
Right of Purchase ... ..	5,639,519	4,724,954	4,579,418	4,424,814	4,232,009	3,697,423
Perpetual ... ..	7,115,782	11,445,372	12,568,576	13,269,290	14,088,223	14,789,305
Pastoral ... ..	68,916,125	76,685,510	79,388,240	83,009,650	87,038,450	91,434,450
Other Leases and Licenses ... ..	3,905,729	2,113,718	1,985,866	1,812,959	1,513,032	1,394,964
*Mining " " ... ..	14,140	213,492	170,204	100,387	84,293	197,714
<b>Total ... ..</b>	<b>85,591,295</b>	<b>95,183,046</b>	<b>98,692,304</b>	<b>102,617,100</b>	<b>106,956,007</b>	<b>111,513,856</b>
<b>4. Total Occupied ... ..</b>	<b>93,680,192</b>	<b>104,130,004</b>	<b>108,142,787</b>	<b>112,276,281</b>	<b>116,924,158</b>	<b>122,245,683</b>
<b>5. Area Unoccupied ... ..</b>	<b>149,564,608</b>	<b>139,114,796</b>	<b>135,102,013</b>	<b>130,988,519</b>	<b>126,320,642</b>	<b>120,999,117</b>
<b>Total area of State (proper), south of lat. 26° S.—243,244,800 acres.</b>						

\* Exclusive of miners' rights.

**6. Northern Territory.**—On the 1st January, 1911, the Northern Territory was taken over by the Commonwealth. In the Northern Territory at the end of the year 1910, there were 473,990 acres, or only about one one-seven-hundred-and-seventh part alienated absolutely; 99,175,023 acres, or nearly one-third, were held under leases and licenses; while the remaining 235,467,787 acres, or about two-thirds, were unoccupied. The following table shews the area of land alienated absolutely, and in process of alienation under deferred payments, and also the area under lease :—

**NORTHERN TERRITORY.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 to 1910.**

Particulars.	Area in Acres.					
	1901.	1906.	1907.	1908.	1909.	1910.
<b>1. Alienated—</b>						
Sold ... ..	473,230	473,232	473,232	473,761	473,761	473,942
Granted for Public Purposes ... ..	48	48	48	48	48	48
<b>Total Alienated ... ..</b>	<b>473,278</b>	<b>473,280</b>	<b>473,280</b>	<b>473,809</b>	<b>473,809</b>	<b>473,990</b>
<b>2. Leased—</b>						
Right of Purchase ... ..	1,067	2,397	2,771	2,931	5,224	667
Pastoral ... ..	111,476,240	108,347,680	105,918,880	102,123,040	95,559,840	98,729,120
Other Leases ... ..	1,176,981	1,376,010	1,347,858	1,293,457	512,650	445,236
<b>Total Leased ... ..</b>	<b>112,654,288</b>	<b>109,726,087</b>	<b>107,269,509</b>	<b>103,419,428</b>	<b>96,077,714</b>	<b>99,175,023</b>
<b>3. Total Occupied ... ..</b>	<b>113,127,566</b>	<b>110,199,367</b>	<b>107,742,789</b>	<b>103,893,237</b>	<b>96,551,523</b>	<b>99,649,013</b>
<b>4. Remainder Unoccupied ... ..</b>	<b>221,989,234</b>	<b>224,917,433</b>	<b>227,374,011</b>	<b>231,223,563</b>	<b>238,565,277</b>	<b>235,467,787</b>

**Total area of Northern Territory—335,116,800 acres.**

7. **Western Australia.**—The total area of Western Australia is 624,588,800 acres, of which on the 30th June, 1911, 7,202,696 acres, or about a one-eighty-seventh part, were alienated absolutely; 11,843,236 acres, or about one-fifty-third part, were in process of alienation; while 169,937,644 acres, or about one-quarter, were occupied under leases and licenses issued either by the Lands or the Mines Departments. The remaining 435,605,224 acres, or about two-thirds, were unoccupied.

The following table shews the area alienated absolutely and conditionally, and the areas held under leases and licenses at the end of the years 1901 and on 30th June, 1907 to 1911:—

**WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 to 1911.**

Particulars.	Area in Acres.					
	1901.	1906-7.*	1907-8.*	1908-9.*	1909-10.*	1910-11.*
1. <i>Absolutely Alienated</i> ...	3,468,878	3,969,965	4,258,190	4,343,808	4,449,320	7,202,696
2. <i>In Process of Alienation</i> —						
Midland Railway Concessions...	2,768,810	2,768,810	2,686,521	2,686,521	2,686,521	121,809
Free Homestead Farms ...	283,455	969,939	1,060,153	1,208,023	1,366,066	1,454,275
Conditional Purchases...	1,349,554	3,715,035	4,195,287	4,855,747	6,067,901	7,305,932
Selections from the late W.A. Company ...	75,213	53,094	48,966	43,247	38,628	33,250
Selections under the Agricultural Lands Purchase Act ...	37,235	142,647	146,770	180,313	202,059	250,646
Special Occupation Leases and Licenses ...	8,867	5,000	4,320	3,353	2,805	2,404
Homestead or Grazing Leases ...	286,425	1,242,839	1,516,755	2,278,714	2,433,341	2,592,043
Poison Land Leases or Licenses ...	1,306,270	201,965	85,303	85,303	82,019	82,019
Immigrants' Grants ...	400	100	100	100	100	100
Village Allotments ...	6	33	36	36	36	36
Working-men's Blocks...	31	489	537	667	719	722
Total in Process of Alienation	6,116,266	9,100,041	9,744,748	11,342,024	12,880,195	11,843,236
3. <i>Leases and Licenses in Force</i> —						
(i.) <i>Issued by Lands Department</i>						
Pastoral Leases ...	96,508,549	159,130,182	159,929,858	162,277,805	165,463,185	167,933,347
Special Leases ...	448	15,431	83,568	31,300	24,780	26,710
Leases of Reserves ...	5,296	77,518	207,571	219,582	475,901	572,400
Selections in Goldfields ...	3,955	100	100	100	100	100
Timber Leases and Licenses ...	865,180	864,521	903,154	916,386	1,143,572	1,304,282
Residential Lots ...	550	831	676	599	534	468
(ii.) <i>Issued by Mines Department</i>						
Gold Mining Leases...	34,066	27,587	†130,970	†130,970	†128,129	‡100,337
Mineral Leases ...	6,576	34,101				
Other Leases ...	8,623	28,020				
Licenses ...	17,397	27,653				
Total under Leases and Licenses	97,450,660	160,205,944	161,255,897	163,576,742	167,236,201	169,937,644
4. <i>Area Unoccupied</i> ...	517,552,996	451,312,850	449,329,965	445,326,226	440,023,075	435,605,224

Total area of State—624,588,800 acres.

\* Figures are now given as up to the 30th June, instead of as up to 31st December. Figures for previous years may be obtained from the Statistical Registers of Western Australia. † On the 31st December, 1906. ‡ On the 31st December.

8. **Tasmania.**—Of the total area of Tasmania, namely, 16,777,600 acres, there were at the end of the year 1910, 4,932,276 acres, or about one-quarter, alienated absolutely; 1,104,379 acres, or about one-fifteenth, were in process of alienation; 1,460,523 acres, or about one-eleventh, were occupied under leases and licenses for either pastoral, agricultural, timber, or mining purposes; the remaining 9,280,422 acres, or about five-eighths, being unoccupied. The following table shews the areas alienated, in process of alienation, and held under lease or license, and the area unoccupied at the end of the year 1901 and from 1906 to 1910:—

## TASMANIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 to 1910.

Particulars.	Area in Acres.					
	1901.	1906.	1907.	1908.	1909.	1910.
1. <i>Alienated Absolutely</i> ...	4,621,585	4,765,701	4,805,697	4,848,058	4,890,000	4,932,276
2. <i>In Process of Alienation</i> ...	272,376	710,837	796,725	870,088	1,006,642	1,104,379
3. <i>Leases or Licenses</i>						
(i.) <i>Issued by Lands Department—</i>						
Islands ...	149,165	91,131	109,531	103,130	90,100	87,100
Ordinary Leased Land ...	1,280,688	1,112,311	1,145,823	1,235,823	1,173,823	1,176,900
Land Leased for Timber ...	40,768	86,817	88,035	91,972	100,088	108,889
Closer Settlement ...	—	—	10,365	18,156	27,657	29,726
(ii.) <i>Issued by Mines Department</i> ...	50,362	53,122	79,163	66,693	55,819	57,908
Total ...	1,520,963	1,343,381	1,432,917	1,505,774	1,447,497	1,460,523
4. <i>Total Area Occupied</i> ...	6,414,944	6,822,919	7,035,339	7,223,920	7,344,139	7,497,178
5. <i>Area Unoccupied</i> ...	10,362,656	9,954,681	9,742,261	9,553,680	9,433,461	9,280,422
Total area of State—16,777,600 acres.						

## § 12. Classification of Holdings according to Size.

1. **General.**—The classification of holdings according to their area is of interest chiefly in relation to the efforts made by the several States in recent years to promote settlement on the land on blocks of suitable size, especially by means of the Closer Settlement Acts. Returns shewing such a classification are not available for Queensland.

The following table gives particulars of the number and aggregate area of holdings of lands alienated and in process of alienation in area series, as returned to the collectors of agricultural statistics, in New South Wales, Victoria, Western Australia, and Tasmania, for the season 1910-11:—

## CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1910-11.

Size of Holdings.	N.S.W.	Victoria.	S. Aust.	N.Ter'tory.	W. Aust.	Tasmania.	Total.
NUMBER.							
Acres.							
1 to 50 ...	37,272	16,609	6,745	2	3,135	4,596	68,359
51 .. 100 ...	9,159	6,696	1,646	...	549	2,334	20,384
101 .. 500 ...	25,322	23,397	5,542	7	3,212	4,957	62,437
501 .. 1,000 ...	7,911	8,216	3,370	3	2,777	675	22,952
1,001 .. 5,000 ...	6,395	4,908	2,540	1	2,616	589	17,049
5,001 .. 10,000 ...	738	239	110	...	189	119	1,395
10,001 .. 20,000 ...	344	131	53	1	79	51	659
20,001 .. 50,000 ...	267	42	23	...	24	26	382
50,001 and over ...	95	2	1	4	7	2	111
Total ...	87,503	60,240	20,030	18	12,588	13,349	193,728
AREA.							
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1 to 50 ...	503,677	322,297	102,259	5	35,922	71,850	1,036,050
51 .. 100 ...	722,604	514,529	123,676	...	47,796	157,892	1,566,397
101 .. 500 ...	6,346,059	6,049,267	1,563,156	1,637	903,916	992,020	15,856,055
501 .. 1,000 ...	5,526,680	5,814,331	2,389,368	2,479	2,160,924	453,485	16,347,267
1,001 .. 5,000 ...	12,631,799	8,750,188	4,395,217	1,031	5,121,197	1,226,455	32,125,887
5,001 .. 10,000 ...	5,120,548	1,651,979	691,501	...	1,283,562	825,422	9,573,012
10,001 .. 20,000 ...	4,762,872	1,881,282	638,253	16,000	1,069,226	687,913	9,085,546
20,001 .. 50,000 ...	7,869,633	1,300,459	631,353	...	866,346	706,996	11,334,787
50,001 and over ...	8,750,582	116,486	67,715	541,200	439,947	258,898	10,174,828
Total ...	52,174,454	26,400,818	10,602,398	562,352	11,978,836	5,380,971	107,099,829

2. **New South Wales.**—The total number of holdings of one acre and over in area in this State on the 31st March, 1901, was 69,439. On the 31st March, 1911, the corresponding number was 87,503, shewing an increase of 18,064, or about 26.01 per cent. The following table shews the number of holdings of various sizes alienated absolutely, and in process of alienation, on the 31st March, 1901, and from 1905 to 1911:—

**NEW SOUTH WALES.—CLASSIFICATION OF HOLDINGS ALIENATED AND IN  
PROCESS OF ALIENATION, 1901 to 1911.**

Size of Holdings.	1901.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50 ...	28,155	31,734	32,413	33,184	34,833	35,345	36,288	37,272
51 " 100 ...	8,929	9,108	9,217	9,185	9,136	9,105	9,173	9,159
101 " 500 ...	20,504	21,989	22,268	22,986	23,652	24,069	24,672	25,322
501 " 1,000 ...	6,105	6,607	6,735	6,944	7,203	7,321	7,632	7,911
1,001 " 5,000 ...	4,464	4,928	5,185	5,373	5,542	5,796	5,991	6,395
5,001 " 10,000 ...	579	584	598	625	638	691	711	738
10,001 " 20,000 ...	352	357	356	364	368	358	348	344
20,001 " 50,000 ...	202	256	254	259	256	257	264	267
50,001 and over ...	149	109	110	106	104	103	99	95
Total ...	69,439	75,672	77,136	79,02	81,732	83,045	85,178	87,503

3. **Victoria.**—Lands alienated absolutely and in process of alienation in this State were classified according to size in March, 1906, 1908, and 1910. The following table shews the number and area of holdings of lands alienated absolutely and in process of alienation, on the 1st March, 1906, 1908 and 1910:—

**VICTORIA.—CLASSIFICATION OF PRIVATE HOLDINGS, 1906 to 1910.**

Size of Holdings.	1906.	1908.	1910.
Acres.	Number.	Number.	Number.
1 to 50 ...	13,309	14,692	16,609
51 " 100 ...	5,864	6,223	6,696
101 " 500 ...	21,628	22,510	23,397
501 " 1,000 ...	7,688	7,817	8,216
1,001 " 5,000 ...	4,083	4,409	4,908
5,001 " 10,000 ...	220	231	239
10,001 " 20,000 ...	116	118	131
20,001 " 50,000 ...	73	61	42
50,001 and over ...	6	4	2
Total ...	52,987	56,065	60,240

4. **South Australia and Northern Territory.**—In the State of South Australia and in the Northern Territory the number of holdings of alienated lands, and lands in process of alienation, was available for the first time in 1910-11. The following table shews the number and area of lands alienated absolutely and in process of alienation during 1910-11.

**SOUTH AUSTRALIA AND NORTHERN TERRITORY.—NUMBER OF HOLDINGS OF  
ALIENATED LANDS AND LANDS IN PROCESS OF ALIENATION, 1910-11.**

Size of Holdings,				South Australia.		Northern Territory.	
				1910-11.		1910-11.	
Acres.				Number.	Area.	Number.	Area.
1 to	50	...	...	6,745	102,259	2	5
51	100	...	...	1,646	123,576	...	...
101	500	...	...	5,542	1,563,156	7	1,637
501	1,000	...	...	3,370	2,389,368	3	2,479
1,001	5,000	...	...	2,540	4,395,217	1	1,031
5,001	10,000	...	...	110	691,501	...	...
10,001	20,000	...	...	53	638,253	1	16,000
20,001	50,000	...	...	23	631,353	...	...
50,001 and over		...	...	1	67,715	4	541,200
Total	...	...	...	20,030	10,602,398	18	562,352

5. **Western Australia.**—In this State the number of holdings of one acre and over in area was 5699 for the season 1900-1 (see Year Book No. 1), and 12,588 for the season 1910-11, shewing an increase of 6889, or about 120.88 per cent. The subjoined table shews the number of holdings of lands alienated absolutely, and in process of alienation, for which returns were received for different seasons since the season 1900-1901, classified according to size:—

**WESTERN AUSTRALIA.—NUMBER OF HOLDINGS OF ALIENATED LANDS AND LAND  
IN PROCESS OF ALIENATION, 1901 to 1911.**

Size of Holdings.		1900-1.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
Acres.		Number.	Number.	Number.	Number.	Number.	Number.	Number.
1 to	50	1,728	2,593	2,714	2,933	3,061	3,078	3,135
51	100	198	518	518	509	510	517	549
101	500	2,302	2,579	2,798	3,067	3,314	3,318	3,212
501	1,000	717	1,311	1,497	1,731	2,038	2,320	2,777
1,001	5,000	607	1,263	1,399	1,685	1,848	2,200	2,616
5,001	10,000	73	134	137	145	158	170	189
10,001	20,000	38	49	65	66	71	88	79
20,001	50,000	36*	23	22	24	25	29	24
50,001 and over		...	5	7	7	6	6	7
Total	...	5,699	8,475	9,157	10,167	11,031	11,726	12,588

\* Including number of holdings of 30,001 acres and upwards.

6. **Tasmania.**—In Tasmania the total number of holdings of lands alienated absolutely and in process of alienation on the 1st March, 1909, was 12,413. Particulars for previous years are not available. The following table shews the classification of holdings in area series in 1908-9, 1909-10 and 1910-11 :—

**TASMANIA.—NUMBER OF HOLDINGS OF ALIENATED LANDS AND LANDS IN  
PROCESS OF ALIENATION, 1908-9, 1909-10, and 1910-11.**

Size of Holdings.	1908-9.		1909-10.		1910-11.	
	Number.	Area.	Number.	Area.	Number.	Area.
Acres.		Acres.		Acres.		Acres.
1 to 50	4,301	68,826	4,526	69,762	4,596	71,890
51 „ 100	2,277	153,743	2,341	158,523	2,334	157,892
101 „ 500	4,486	891,603	4,784	952,330	4,957	992,020
501 „ 1,000	585	391,521	624	414,773	675	453,485
1,001 „ 5,000	572	1,197,568	588	1,189,692	589	1,226,455
5,001 „ 10,000	108	726,851	116	803,711	119	825,422
10,001 „ 20,000	57	788,995	61	804,773	51	687,913
20,001 „ 50,000	24	651,762	26	721,801	26	706,996
50,001 and over	3	274,031	2	287,053	2	258,898
Total ...	12,413	5,144,900	13,068	5,402,418	13,349	5,380,971

### § 13. The Progress of Land Settlement, 1901 to 1910.

1. **Recent Progress.**—The progress of settlement and the growth of land alienation in the States of the Commonwealth under recent legislation is seen in the subjoined statement, which shews concisely the condition of the public estate in each State and in the Commonwealth at the end of each year from 1901 to 1910, inclusive. The effect of the land laws during that period has been generally to diminish the number of large holdings, at the same time decreasing the area held under lease, while both the area alienated and the area in process of alienation have increased. As leases of large areas fall in or are otherwise terminated they are in many cases not renewed, but the land leased is cut up for the purpose of settlement under systems of deferred payment; the State Governments, also, have in many cases acquired by repurchase considerable areas under the provisions of the various Closer Settlement Acts. Further, greater facilities have been granted to the working classes to acquire possession of the soil, and special inducements have been offered to *bona fide* settlers by the introduction of new forms of tenure on easy terms and conditions.

From 1901 to 1910 the area alienated absolutely in the whole Commonwealth increased by 20,009,094 acres, or 26 per cent.; the area in process of alienation increased by 9,688,939 acres, or 28 per cent.; the area leased by 94,530,953 acres, or 13 per cent.; while the area unoccupied decreased by 125,771,014 acres, or 12 per cent.



**TOTAL AREAS ALIENATED, IN PROCESS OF ALIENATION,  
HELD UNDER LEASE OR LICENSE, AND UNOCCUPIED, IN EACH STATE AND IN  
THE COMMONWEALTH AT THE END OF EACH YEAR FROM 1901 TO 1910  
INCLUSIVE, EXPRESSED ABSOLUTELY AND AS PERCENTAGES OF AREA OF  
ENTIRE STATE.**

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Unoccupied.	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.

**NEW SOUTH WALES.—AREA, 198,638,080 ACRES.**

1901	26,443,554	13.32	21,595,688	10.87	127,055,370	63.96	23,543,468	11.85
1902	27,658,901	13.93	21,042,993	10.59	131,781,329	66.34	18,154,857	9.14
1903	28,765,090	14.48	20,558,609	10.35	128,461,932	64.67	20,852,449	10.50
1904	29,968,317	15.09	19,296,487	9.71	124,027,706	62.44	25,345,570	12.76
1905	30,721,430	15.47	18,797,421	9.46	124,027,706	62.44	25,091,523	12.63
1906 <sup>1</sup>	32,486,086	16.36	17,532,816	8.83	124,237,031	62.54	24,382,147	12.27
1907 <sup>1</sup>	33,921,508	17.08	16,720,147	8.42	126,081,293	63.47	21,915,132	11.03
1908 <sup>1</sup>	35,467,021	17.85	15,798,047	7.95	129,150,578	65.02	18,222,434	9.18
1909 <sup>1</sup>	36,783,741	18.52	15,217,891	7.66	128,390,868	64.63	18,245,580	9.19
1910 <sup>1</sup>	37,999,049	19.13	15,460,919	7.78	125,733,630	63.30	19,444,482	9.79
1911 <sup>1</sup>	38,741,736	19.50	16,210,185	8.16	123,223,559	62.04	20,462,600	10.30

1. To 30th June.

**VICTORIA.—AREA, 56,245,760 ACRES.**

1901	20,066,875	35.67	3,730,351	6.63	17,110,709	30.42	15,337,825	27.28
1902	20,585,413	36.60	3,491,813	6.21	17,254,468	30.67	14,914,066	26.52
1903	21,095,586	37.51	3,448,726	6.13	9,516,186	16.92	22,185,262	39.44
1904	21,679,596	38.54	4,140,867	7.37	13,693,116	24.34	16,732,181	29.75
1905	22,584,092	40.15	3,819,733	6.79	17,938,838	31.90	11,903,047	21.16
1906	22,816,538	40.57	4,040,209	7.18	16,683,992	29.66	12,705,021	22.59
1907	22,940,143	40.79	4,488,346	7.98	16,565,917	29.45	12,251,354	21.78
1908	23,074,634	41.03	4,890,021	8.69	15,955,346	28.36	12,325,759	21.92
1909	23,107,613	41.08	5,358,496	9.53	16,384,395	29.13	11,395,256	20.26
1910	23,568,070	41.90	5,869,185	10.43	15,433,875	27.45	11,374,630	20.22

**QUEENSLAND.—AREA, 429,120,000 ACRES.**

1901	13,533,468	3.15	2,791,664	0.65	280,023,979	65.26	132,770,889	30.94
1902	13,663,446	3.18	3,160,909	0.74	289,552,857	67.48	122,742,788	28.60
1903	13,770,725	3.21	3,220,402	0.75	277,639,715	64.70	134,489,158	31.34
1904	14,031,886	3.27	3,165,737	0.74	236,249,168	55.05	175,673,209	40.94
1905	14,252,664	3.32	3,407,210	0.79	240,162,954	55.97	171,297,172	39.92
1906	14,585,560	3.40	3,737,083	0.87	247,068,540	57.58	163,728,817	38.15
1907	14,924,417	3.48	4,778,908	1.11	264,219,200	61.57	145,197,475	33.84
1908	15,108,439	3.52	6,200,930	1.45	273,307,365	63.69	134,503,266	31.34
1909	15,296,688	3.56	6,806,467	1.59	283,023,871	65.95	123,992,974	28.90
1910	15,460,352	3.60	7,971,342	1.86	295,385,129	68.84	110,303,177	25.70

**SOUTH AUSTRALIA.—AREA, 243,244,800 ACRES.**

1901	7,535,123	3.10	553,774	0.23	85,591,295	35.18	149,564,608	61.49
1902	7,655,204	3.15	451,232	0.19	89,355,938	36.74	145,782,426	59.92
1903	7,799,729	3.21	344,258	0.14	91,123,625	37.46	143,977,188	59.19
1904	8,020,908	3.30	310,589	0.13	92,552,386	38.04	142,360,917	58.53
1905	8,114,124	3.34	455,381	0.19	94,275,954	38.76	140,399,341	57.71
1906	8,187,621	3.37	759,337	0.31	95,183,046	39.13	139,114,796	57.19
1907	8,316,059	3.42	1,134,424	0.47	98,692,304	40.57	135,102,013	55.54
1908	8,463,631	3.48	1,195,550	0.49	102,617,100	42.20	130,968,519	53.83
1909	8,670,874	3.56	1,297,277	0.53	106,956,007	43.97	126,320,642	51.94
1910	9,268,789	3.81	1,463,038	0.60	111,513,856	45.80	120,999,117	49.79

## TOTAL AREAS ALIENATED, IN PROCESS OF ALIENATION, ETC.—Continued

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Unoccupied.	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.								
1901	473,278	0.14	...	...	112,654,288	33.62	221,989,234	66.24
1902	473,278	0.14	...	...	113,865,968	33.98	220,777,554	65.88
1903	473,278	0.14	...	...	104,638,788	31.23	230,004,734	68.63
1904	473,278	0.14	...	...	104,670,948	31.23	229,972,574	68.63
1905	473,279	0.14	...	...	103,230,346	30.82	231,363,175	69.04
1906	473,280	0.14	...	...	109,726,087	32.74	224,917,433	67.12
1907	473,280	0.14	...	...	107,269,509	32.01	227,374,011	67.85
1908	473,809	0.14	...	...	103,419,428	30.86	231,223,563	69.00
1909	473,809	0.14	...	...	96,077,714	28.67	238,565,277	71.19
1910	473,990	0.14	...	...	99,175,023	29.60	235,467,787	70.26

## WESTERN AUSTRALIA.—AREA, 624,588,800 ACRES.

1901	3,468,878	0.56	6,116,266	0.98	97,450,660	15.60	517,552,996	82.86
1902	3,517,724	0.56	6,338,868	1.02	112,177,993	17.95	502,554,215	80.47
1903	3,646,139	0.58	6,901,918	1.11	135,700,188	21.72	478,340,555	76.59
1904	3,724,789	0.60	7,833,519	1.25	139,888,351	22.39	473,142,141	75.76
1905	3,765,975	0.60	8,614,060	1.38	145,802,790	23.34	466,405,975	74.68
1906 <sup>1</sup>	3,781,613	0.60	8,794,289	1.41	152,551,086	24.42	459,461,812	73.57
1907 <sup>1</sup>	3,969,965	0.63	9,100,041	1.46	160,205,944	25.65	451,312,850	72.26
1908 <sup>1</sup>	4,258,190	0.68	9,744,748	1.56	161,255,897	25.82	449,329,965	71.94
1909 <sup>1</sup>	4,343,808	0.70	11,342,024	1.81	163,576,742	26.19	445,326,226	71.30
1910 <sup>1</sup>	4,449,329	0.71	12,880,195	2.06	167,236,201	26.78	440,023,075	70.45
1911 <sup>1</sup>	7,202,696	1.15	11,843,236	1.90	169,937,644	27.21	435,605,224	69.74

1. To 30th June.

## TASMANIA.—AREA, 16,777,600 ACRES.

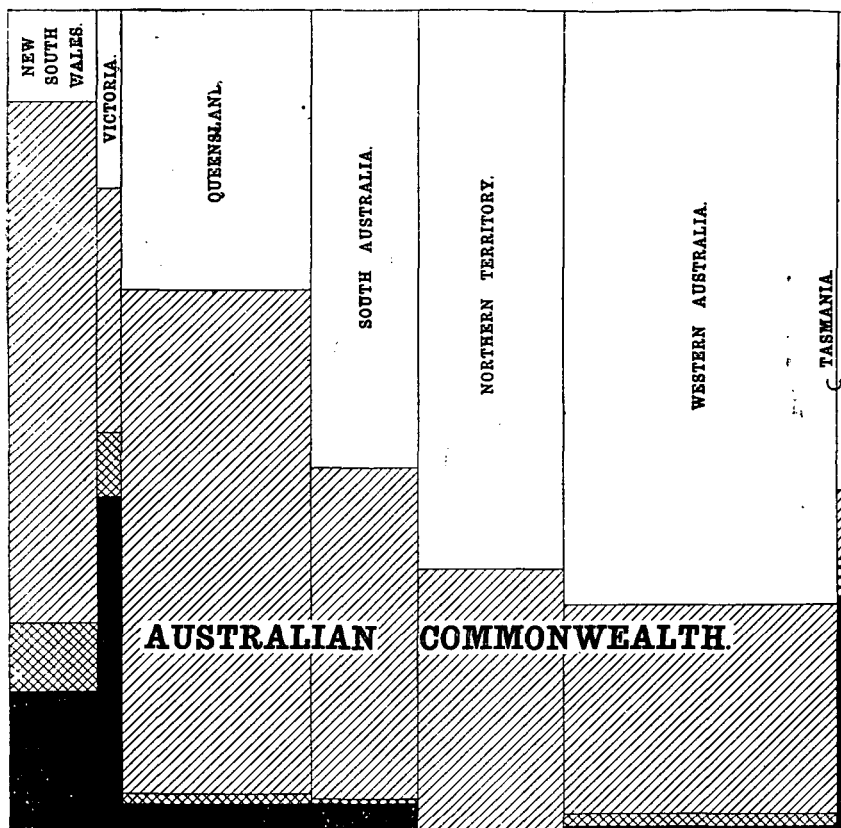
1901	4,621,585	27.54	272,376	1.62	1,520,983	9.06	10,362,656	61.78
1902	4,658,878	27.76	296,672	1.77	1,518,895	9.05	10,303,155	61.42
1903	4,685,521	27.93	354,892	2.11	1,582,286	9.43	10,154,901	60.53
1904	4,724,380	28.16	444,441	2.65	1,389,643	8.28	10,219,136	60.91
1905	4,740,710	28.26	598,243	3.56	1,304,861	7.77	10,133,786	60.41
1906	4,768,701	28.42	710,837	4.24	1,343,381	8.01	9,954,681	59.33
1907	4,805,697	28.64	796,725	4.75	1,432,917	8.54	9,742,261	58.07
1908	4,848,058	28.90	870,088	5.19	1,505,774	8.97	9,553,680	56.94
1909	4,890,000	29.15	1,006,642	6.00	1,457,497	8.68	9,423,461	56.17
1910	4,932,276	29.40	1,104,379	6.58	1,460,523	8.71	9,280,422	55.31

1. Included in area alienated.

## THE COMMONWEALTH.—AREA, 1,903,731,840 ACRES.

1901	76,142,761	4.00	35,060,119	1.84	721,407,284	37.89	1,071,121,676	56.27
1902	78,212,844	4.11	34,782,487	1.82	755,507,448	39.66	1,035,229,061	54.41
1903	80,236,068	4.21	34,828,805	1.82	748,662,720	39.32	1,040,004,247	54.65
1904	82,623,154	4.34	35,191,640	1.85	712,471,318	37.42	1,073,445,728	56.39
1905	84,652,274	4.45	35,692,098	1.87	726,793,449	38.18	1,056,594,019	55.50
1906	87,099,399	4.57	35,574,571	1.87	746,793,163	39.23	1,034,264,707	54.33
1907	89,351,069	4.69	37,018,591	1.95	774,467,084	40.68	1,002,895,096	52.68
1908	91,693,782	4.82	38,699,384	2.02	787,211,488	41.36	986,127,186	51.80
1909	93,566,533	4.91	41,028,797	2.15	795,877,094	41.81	973,259,416	51.13
1910	96,151,855	5.05	44,749,058	2.35	815,938,237	42.85	946,892,690	49.75

2. **Diagram shewing Condition of Public Estate.**—The following diagram shows the condition of the public estate in the Commonwealth at the end of the year 1910. The square itself represents the total area of the Commonwealth, while the relative areas of individual States are shown by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of deferred payments, and the areas held under leases or licenses, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded:—



Area alienated absolutely



Area held under lease, etc.



Area in process of alienation



Area unoccupied



3. **Federal Territory.** The following particulars relate to the tenures of land within the Federal Capital Territory at the end of the year 1911. The figures are approximate:—

**FEDERAL CAPITAL TERRITORY, TENURES OF LAND, 1911.**

Alienated.	In Process of Alienation.	Leases.	Unoccupied.	Total.
Acres. 173,528	Acres. 149,601	Acres. 213,662	Acres. 25,890	Acres. 562,681

## SECTION VII.

## PASTORAL PRODUCTION.

## § 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—The live stock which Captain Phillip brought with him when establishing the first settlement in Australia, in January, 1788, is stated to have comprised seven horses, six cattle, twenty-nine sheep, twelve pigs, and a few goats. Later in the same year, in a letter from Captain Phillip to Lord Sydney, then Secretary of State for the Colonies, an enclosure signed by "Andrew Miller, Commissary," sets forth in detail the numbers of each kind of live stock in the colony on 1st May, 1788. A summary of the particulars supplied is as follows:—Horses, 7; cattle, 7; sheep, 29; pigs, 74; rabbits, 5; turkeys, 18; geese, 29; ducks, 35; fowls, 209. In view of the depredation since caused by rabbits their inclusion in this return as part of the live stock of the Commonwealth is of interest.

2. **Subsequent Development.**—During the years immediately succeeding the first settlement the growth of the number of live stock was slow, and notwithstanding importations from India and the Cape of Good Hope the total of the flocks and herds of Australia amounted in 1800 to only 203 horses, 1044 cattle, 6124 sheep, and 4017 pigs. During the next fifty years, however, the pastoral industry made rapid strides, and at the end thereof (1850) the totals reached were 159,951 horses, 1,894,834 cattle, 15,993,954 sheep, and 114,000 pigs.

The statistical records of live stock in Australia prior to the year 1860 are somewhat defective, but from that year onwards fairly complete particulars are available in most of the States. At the present time statistics of live stock are collected annually in all the States, principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, no such particulars were collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for the Commonwealth for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Numbers.**—Particulars concerning the numbers of each of the principal kinds of live stock in the Commonwealth at quinquennial intervals from 1860 to 1905, and thence onwards in single years, are given in the following table, and are shewn continuously in the graphs as given hereinafter.

During the fifty years covered by the table the live stock of the Commonwealth increased considerably, horses by 402 per cent., cattle 197 per cent., sheep 357 per cent., and pigs 192 per cent. The average annual increases which these aggregates represent are as follows:—Horses, 3.29 per cent. per annum; cattle, 2.20 per cent.; sheep, 3.09 per cent.; and pigs, 2.16 per cent.

## COMMONWEALTH LIVE STOCK, 1860 to 1910.

Year.	Horses.	Cattle.	Sheep.	Pigs.
1860 ...	431,525	3,957,915	20,135,286	351,096
1865 ...	566,574	3,724,813	29,539,928	345,704
1870 ...	716,772	4,276,326	41,593,612	543,388
1875 ...	835,393	6,389,610	53,124,209	549,808
1880 ...	1,061,078	7,523,000	62,176,027	815,776
1885 ...	1,143,064	7,397,847	67,491,976	748,908
1890 ...	1,521,588	10,299,913	97,881,221	891,138
1895 ...	1,680,419	11,767,488	90,689,727	822,750
1900 ...	1,609,654	8,640,225	70,602,995	950,349
1905 ...	1,674,790	8,528,331	74,540,916	1,014,977
1906 ...	1,765,186	9,349,409	83,687,655	813,569
1907 ...	1,871,714	10,128,486	87,650,263	754,101
1908 ...	1,927,729	10,547,679	87,043,266	695,691
1909 ...	2,022,917	11,040,391	91,676,281	765,137
1910 ...	2,165,866	11,744,714	92,047,015	1,025,850

4. **Fluctuations.**—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895 and subsequent years, 1902, and to some extent in 1908. The drought of 1902 was one of the most severe experienced in Australia, the number of sheep in the Commonwealth diminishing under its influence from 72,040,211 on 31st December, 1901, to 53,668,347 at the same date in 1902—a decrease of more than 25 per cent.

The extraordinary recuperative power of Australia is evidenced by the large increases in the numbers of stock which the good seasons, supervening on the various droughts have witnessed. Thus, in the eight years from 1902 to 1910, horses increased by 641,265 cattle by 4,681,972, and sheep by 38,378,668, the corresponding increases per cent. per annum being horses 4.49 per cent., cattle 6.56 per cent., and sheep 6.98 per cent.

The number of horses in the Commonwealth at the end of 1910 was higher than for any previous year. The number of cattle was higher than for any year since 1895, and the number of sheep higher than for any year since 1894. The years in which the numbers of live stock attained their maxima are as follows:—Horses, 1910, 2,165,866; cattle, 1894, 12,311,617; sheep, 1891, 106,421,068; and pigs, 1904, 1,062,703.

5. **Live Stock in Relation to Population.**—The number of each kind of live stock per head of the population of the Commonwealth has varied during the past fifty years in the manner shewn in the succeeding table:—

## NUMBER OF LIVE STOCK PER HEAD OF POPULATION, 1860 to 1910.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860 ...	0.38	3.45	17.58	0.31	1902 ...	0.39	1.82	13.85	0.20
1865 ...	0.41	2.68	21.25	0.25	1903 ...	0.39	1.85	14.54	0.21
1870 ...	0.43	2.60	25.24	0.33	1904 ...	0.40	1.97	16.56	0.27
1875 ...	0.44	3.37	27.99	0.29	1905 ...	0.42	2.11	18.48	0.25
1880 ...	0.48	3.37	27.87	0.37	1906 ...	0.43	2.29	20.45	0.20
1885 ...	0.42	2.75	25.05	0.28	1907 ...	0.45	2.43	21.06	0.18
1890 ...	0.48	3.27	31.06	0.28	1908 ...	0.46	2.49	20.57	0.16
1895 ...	0.48	3.36	25.93	0.24	1909 ...	0.47	2.55	21.20	0.18
1900 ...	0.43	2.29	18.75	0.25	1910 ...	0.49	2.65	20.80	0.23
1901 ...	0.42	2.22	18.83	0.24					

Considered in relation to population, the live stock attained its maximum in the period 1890-5, and its minimum in the year 1902. During the period of fifty years under review, the number of horses varied but slightly in proportion to population, the range being from 0.33 to 0.49 per head. In the case of cattle, the limits of variation were 1.82 and 3.45; sheep, 13.85 and 31.06; and pigs, 0.16 and 0.37.

6. **Live Stock in Relation to Area.**—The numbers of live stock per square mile in the several States of the Commonwealth on 31st December, 1910, were as follows:—

**NUMBER OF LIVE STOCK PER SQUARE MILE, 31st DECEMBER, 1910.**

States and Territory.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales ... ..	2.10	10.12	146.79	1.04
Victoria ... ..	5.37	17.61	146.59	3.79
Queensland ... ..	0.89	7.65	30.32	0.23
South Australia... ..	0.66	1.01	16.49	0.25
Western Australia ... ..	0.14	0.85	5.29	0.06
Tasmania ... ..	1.53	7.70	68.22	2.43
Northern Territory ... ..	0.05	0.98	0.11	0.002
Commonwealth ... ..	0.73	3.95	30.94	0.34

7. **Minor Classes of Live Stock.**—The numbers of minor classes of live stock returned as at 31st December, 1911, were as follows:—Goats, 313,917; camels, 8426; mules, 1350; donkeys, 3807; and ostriches, 1739. Of these, goats were most numerous in Queensland, camels and donkeys in Western Australia, and mules and ostriches in South Australia. In the raising of goats, considerable attention has in recent years been devoted to the angora goat and its product—mohair, and upwards of 20,000 angora goats are included in the total of 313,917 goats shown above. Of these, upwards of 9000 were in Queensland, while the quantity of mohair produced in that State in 1910 was set down at 7096 lbs., and the number of skins placed on the market was returned as 1753.

8. **Net Exports of Principal Pastoral Products.**—The quantities by which the exports of the principal pastoral products of the Commonwealth exceeded the imports for the years 1906 to 1910 are as follows:—

**QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS  
OF THE COMMONWEALTH, 1906 to 1910.**

Products.	Unit of Quantity.	1906.	1907.	1908.	1909.	1910.
<b>Animals (living)—</b>						
Cattle ... ..	No.	391	504	841	894	3,641
Horses ... ..	"	10,346	12,116	9,164	6,335	6,619
Sheep ... ..	"	6,477	—398	9,001	2,540	10,281
Bones ... ..	cwt.	1,570	4,459	11,008	13,070	14,145
Glue Pieces and Sinews ... ..	"	19,355	21,941	23,417	20,199	20,570
Glycerine ... ..	lb.	921,828	592,435	*	*	*
Hair ... ..	"	328,555	285,478	191,475	190,052	304,006
Hoofs ... ..	cwt.	4,897	6,784	5,972	4,666	7,677
Horns ... ..	"	15,973	15,944	*	*	*
<b>Meats—</b>						
Frozen Beef ... ..	lb.	41,561,252	52,050,592	40,707,121	71,130,972	109,421,146
" Mutton and Lamb ... ..	"	90,684,899	109,227,757	91,607,614	116,914,965	190,228,396
" Rabbits and Hares ... ..	pair	11,048,201	10,648,534	7,604,053	9,181,312	9,652,127
" Other ... ..	lb.	1,056,902	815,559	659,719	1,114,536	2,640,275
Potted and Extract of ... ..	"	*	*	*	*	*
Preserved in Tins, etc. ... ..	"	8,581,548	7,820,511	11,979,606	22,877,569	33,556,048
Other ... ..	"	141,758	64,370	—120,055	235,479	591,196
Sausage Casings ... ..	"	*	*	*	*	*
<b>Skins—</b>						
Hides ... ..	No.	1,556	33,623	219,798	286,973	286,639
Sheep ... ..	"	7,696,930	9,691,688	8,683,034	10,658,776	11,119,338
Rabbit and Hare ... ..	cwt.	105,569	100,802	65,391	62,180	86,930
Other, including Undressed Furs ... ..	No.	*	*	*	*	*
Tallow ... ..	cwt.	683,178	674,723	586,220	929,157	1,256,661
Wool—Greasy ... ..	lb.	415,141,982	512,036,100	471,540,092	528,388,349	586,883,111
Scoured ... ..	"	64,882,802	72,295,353	70,883,847	73,569,380	77,042,042
Tops ... ..	"	*	*	*	496,492	1,123,460

\* Quantity not available. Note. — signifies net imports.

The values of the net exports for the same five years are furnished in the next table and amount to no less a total than £163,574,262 for the period, or an average of £32,714,852 per annum, of which wool represents nearly 80 per cent. Skins, meats, and tallow rank next in order of importance.

**VALUES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE  
COMMONWEALTH, 1906 to 1910.**

Products.	1906.	1907.	1908.	1909.	1910.
Animals (living)—	£	£	£	£	£
Cattle ... ..	—1,389	—1,445	704	3,876	11,516
Horses ... ..	206,006	266,325	152,672	84,695	—51,267
Sheep ... ..	—2,704	—2,127	5,735	6,030	16,448
Bones ... ..	3,503	5,628	5,189	6,041	7,366
Glue Pieces and Sinews ... ..	13,948	17,458	12,679	11,800	11,037
Glycerine ... ..	9,186	6,983	3,179	2,316	10,169
Hair ... ..	28,812	21,086	16,739	22,584	25,879
Hoofs ... ..	2,355	2,064	2,024	1,622	2,804
Horns ... ..	22,870	18,969	18,270	18,729	25,532
Meats—					
Frozen Beef ... ..	434,455	575,732	451,503	733,028	1,179,060
" Mutton and Lamb ... ..	1,094,984	1,377,502	1,219,107	1,231,027	2,161,495
" Rabbits and Hares ... ..	491,434	472,516	336,093	423,679	486,592
" Other ... ..	13,290	12,814	8,507	18,027	40,816
Potted and Extract of ... ..	—11,477	19,591	22,108	57,061	70,504
Preserved in Tins, etc. ... ..	157,432	133,165	213,476	401,606	602,880
Other ... ..	1,770	673	—2,890	1,663	8,173
Sausage Casings ... ..	1,478	41,122	26,600	52,182	38,204
Skins—					
Hides ... ..	—9,764	—10,079	86,310	239,539	286,274
Sheep ... ..	1,587,579	1,822,604	1,230,878	1,736,464	2,003,810
Rabbit and Hare... ..	476,972	374,882	304,990	347,244	566,739
Other, including Undressed Furs ... ..	445,201	304,130	276,703	607,158	822,065
Tallow ... ..	876,748	1,014,870	785,910	1,229,541	1,888,796
Wool—Greasy ... ..	17,539,836	22,898,318	18,017,420	20,580,783	23,431,947
Scoured ... ..	5,098,195	5,962,599	4,883,805	4,820,092	5,202,683
Tops ... ..	...	...	...	58,638	134,874
Total Values ... ..	28,480,720	35,335,980	28,077,711	32,695,425	38,081,426

Note. — signifies net imports.

## § 2. Horses.

**1. Suitability of Australia for Horse-breeding.**—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognised. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages were utilised to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages the Australian horse, whether of the heavy draught, medium weight, or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes.

**2. Distribution throughout the Commonwealth.**—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it has ever since retained. The figures for the several States for a series of years are as follows:—

**NUMBER OF HORSES IN STATES, NORTHERN TERRITORY, AND COMMONWEALTH,  
1860 to 1910.**

Year.	New South Wales.	Victoria.	Queensl'd.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Common- wealth.
1860 ...	251,497	76,536	23,504	49,399	9,555	21,034	...	431,525
1865 ...	282,587	121,051	51,091	73,993	15,700	22,152	...	566,574
1870 ...	337,597	167,220	83,358	83,744	22,174	22,679	...	716,772
1875 ...	357,696	196,184	121,497	107,164	29,379	23,473	...	835,393
1880 ...	395,984	275,516	179,152	148,219	34,568	25,267	*2,372	1,061,078
1885 ...	344,697	304,098	260,207	164,753	34,392	28,610	6,307	1,143,064
1890 ...	444,163	436,459	365,812	187,686	44,384	31,165	11,919	1,521,588
1895 ...	499,943	424,995	468,743	181,839	58,506	31,580	14,813	1,680,419
1900 ...	481,417	392,237	456,788	166,790	68,253	31,607	12,562	1,609,654
1901 ...	486,716	387,277	462,119	165,303	73,710	32,399	12,896	1,620,420
1902 ...	450,125	382,317	399,122	164,625	80,158	33,466	14,788	1,524,601
1903 ...	458,014	377,357	401,984	176,648	82,747	33,541	15,763	1,546,054
1904 ...	482,663	372,397	413,165	183,481	90,225	36,565	16,760	1,595,256
1905 ...	506,884	385,513	430,565	197,099	97,397	37,101	20,231	1,674,790
1906 ...	537,762	406,840	452,916	206,633	104,922	38,299	17,814	1,765,186
1907 ...	578,326	424,648	488,486	208,639	113,330	40,392	17,893	1,871,714
1908 ...	591,045	424,903	519,969	213,385	116,795	39,881	21,751	1,927,729
1909 ...	604,784	442,829	555,613	230,405	125,315	40,492	23,479	2,022,917
1910 ...	650,636	472,080	593,813	249,326	134,114	41,388	24,509	2,165,866

\* Statistics not collected prior to 1880.

**3. Proportion in the Several States.**—The percentages of the numbers of horses in the several States on the totals for the Commonwealth for the past ten years are as follows:—

**PERCENTAGE OF HORSES IN EACH STATE AND NORTHERN TERRITORY ON  
TOTAL FOR COMMONWEALTH, 1900 to 1910.**

Year.	New South Wales.	Victoria.	Queensl'd.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Common- wealth.
	%	%	%	%	%	%	%	%
1900 ...	29.91	24.37	28.38	10.36	4.24	1.96	0.78	100.00
1901 ...	30.03	23.90	28.52	10.20	4.55	2.00	0.80	100.00
1902 ...	29.52	25.08	26.18	10.80	5.26	2.19	0.97	100.00
1903 ...	29.62	24.41	26.00	11.43	5.35	2.17	1.02	100.00
1904 ...	30.26	23.34	25.90	11.50	5.66	2.29	1.05	100.00
1905 ...	30.27	23.02	25.70	11.77	5.82	2.21	1.21	100.00
1906 ...	30.47	23.05	25.66	11.70	5.94	2.17	1.01	100.00
1907 ...	30.90	22.69	26.10	11.15	6.05	2.16	0.95	100.00
1908 ...	30.66	22.04	26.97	11.07	6.06	2.07	1.13	100.00
1909 ...	29.90	21.89	27.47	11.39	6.19	2.00	1.16	100.00
1910 ...	30.04	21.80	27.42	11.51	6.19	1.91	1.13	100.00

During the period under review, the proportions in South Australia and Western Australia have increased, those in Victoria and Queensland have diminished, while in the case of New South Wales and Tasmania the proportion in 1910 was practically identical with that in 1900.

**4. Oversea Export Trade in Horses.**—Australia's export trade in horses is a fairly considerable, though somewhat fluctuating, one. During the past five years it has varied in number between 12,632 for the year 1907 and 7807 in 1909, and in value between £319,470 and £173,012 respectively for the same two years. The total number of horses exported during the five years amounted to 53,040, an average of 10,608 per annum. The total value of the exports for the period was £1,231,060, or £246,212 per annum.



The average export value per head for the period was £23 4s. 2d. The numbers exported to the principal countries concerned in this trade are as follows:—

**NUMBER AND DESTINATION OF HORSES EXPORTED FROM THE COMMONWEALTH,  
1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
India ... ..	7,981	9,168	6,296	6,136	9,187	38,768
Straits Settlements ... ..	903	991	651	353	605	3,503
Java ... ..	501	954	605	594	450	3,104
Philippine Islands ... ..	118	295	708	315	727	2,163
Ceylon ... ..	40	199	165	97	265	766
Mauritius ... ..	127	...	103	70	403	703
South African Union ... ..	464	167	19	3	1	654
German S.W. Africa ... ..	...	...	622	...	...	622
Japan ... ..	51	284	227	1	43	606
Fiji ... ..	103	57	88	114	190	552
China ... ..	298	178	38	19	1	534
New Zealand ... ..	80	75	52	31	122	360
Papua ... ..	6	18	10	17	110	161
Hong Kong ... ..	6	5	15	29	...	55
Other Countries ... ..	94	241	69	28	57	489
Total ... ..	10,772	12,632	9,668	7,807	12,161	53,040

The corresponding particulars relative to the value of the horses exported are given in the next table:—

**VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 years.
	£	£	£	£	£	£
India ... ..	186,754	225,301	138,068	126,686	171,862	848,671
Straits Settlements ... ..	18,022	26,952	15,491	10,339	21,185	91,989
Java ... ..	12,296	25,502	16,457	19,598	10,424	84,277
Philippine Islands ... ..	2,603	4,949	12,134	5,303	14,971	39,960
Ceylon ... ..	4,335	4,886	3,418	2,201	7,486	22,326
Mauritius ... ..	1,791	...	2,385	480	7,191	11,847
South African Union ... ..	9,223	4,096	931	180	25	14,455
German S.W. Africa ... ..	...	...	13,255	...	...	13,255
Japan ... ..	1,990	11,715	12,234	60	1,860	27,859
Fiji ... ..	2,855	1,142	2,356	2,982	4,566	13,901
China ... ..	5,942	3,299	892	295	60	10,488
New Zealand ... ..	8,261	4,020	3,436	2,847	12,403	30,967
Papua ... ..	109	337	163	936	2,055	3,600
Hong Kong ... ..	160	205	545	888	...	1,798
Other Countries ... ..	3,915	7,066	2,453	217	2,016	15,667
Total ... ..	258,256	319,470	224,218	173,012	256,104	1,231,060

It will be seen from the foregoing tables that the export trade in horses with India, the Straits Settlements, and Java has been fairly uniform throughout the five years under review, but that the particulars for some of the other countries specified exhibit marked fluctuations.

The number of horses imported into the Commonwealth is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, and imported principally from New Zealand and the United Kingdom. The average value per head of the horses imported during the five years was £67 13s. 9d., as compared with £23 4s. 2d. per head for the exports for the same period. The average number imported per annum was, however, only 1692, and the average annual value £114,629. The following table furnishes a comparison of imports and exports of horses during the five years 1906 to 1910:—

#### COMMONWEALTH IMPORTS AND EXPORTS OF HORSES, 1906 to 1910.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1906 ... ..	426	52,250	10,772	258,256	10,346	206,006
1907 ... ..	516	53,145	12,632	319,470	12,116	266,325
1908 ... ..	504	71,546	9,668	224,218	9,164	152,672
1909 ... ..	1,472	88,317	7,807	173,012	6,335	84,695
1910 ... ..	5,542	307,371	12,161	256,104	6,619	—51,267
Total for 5 years	8,460	572,629	53,040	1,231,060	44,580	658,431

Note. — signifies value of net imports.

5. **Comparison with other Countries.**—The numbers of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows:—

#### NUMBER OF HORSES IN SOME OF THE LEADING HORSE-BREEDING COUNTRIES. IN THE WORLD.

Country.	Date.	Number of Horses.	Country.	Date.	Number of Horses.
Russian Empire <sup>1</sup> ...	1909	29,892,319	Uruguay ...	1908	556,307
Utd. States America	1909	21,040,000	Bulgaria ...	1905	538,271
Argentine Republic	1908	7,531,376	Chile ...	1908	516,764
Germany... ..	1907	4,345,043	Spain ...	1909	494,853
Austria-Hungary <sup>2</sup> ...	1902 & 1909	3,714,580	Denmark ...	1903	486,935
France <sup>3</sup> ... ..	1908	3,133,650	New Zealand ...	1908-9	363,259
Australia... ..	1910	2,165,866	Netherlands ...	1904	295,277
Canada <sup>4</sup> ... ..	1909	2,132,489	Cape Colony ...	1904	255,060
United Kingdom <sup>5</sup> ...	1909	2,091,743	Belgium... ..	1908	253,431
Japan <sup>6</sup> ... ..	1908	1,494,506	Algeria ...	1908	236,168
British India <sup>7</sup> ...	1908	1,311,709	Servia ...	1905	174,363
Italy ... ..	1908	955,051	Norway ...	1907	172,468
Rumania ... ..	1900	864,324	Switzerland ...	1906	135,372
Mexico ... ..	1902	859,217	Orange River Col'ny	1907	127,579
Sweden ... ..	1908	574,872			

1. Preliminary figures. 2. Austria 1902, Hungary 1909. 3. Employed on farms. 4. Exclusive of British Columbia. 5. Agricultural horses, unbroken horses, and breeding mares only. 6. Exclusive of Formosa. 7. Exclusive of Bengal.

6. **Relation to Population.**—In proportion to population, horses are much more numerous in the Northern Territory than in any other of the principal divisions of the Commonwealth. Queensland is next in order, while Tasmania has the smallest number of horses per head. In all cases the number of horses per head of population was somewhat higher in 1910 than in 1900. Particulars for the past ten years are as follows:—

NUMBER OF HORSES PER HEAD OF POPULATION, 1901 to 1910.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	C'wealth.
1901 ...	0.35	0.32	0.91	0.46	0.38	0.18	2.76	0.42
1902 ...	0.32	0.32	0.78	0.46	0.38	0.19	3.31	0.39
1903 ...	0.32	0.31	0.78	0.49	0.37	0.18	3.72	0.39
1904 ...	0.33	0.31	0.79	0.51	0.38	0.20	3.98	0.40
1905 ...	0.34	0.32	0.81	0.54	0.39	0.20	5.02	0.42
1906 ...	0.36	0.33	0.84	0.56	0.41	0.21	4.56	0.43
1907 ...	0.38	0.34	0.89	0.56	0.45	0.21	4.79	0.45
1908 ...	0.38	0.34	0.93	0.55	0.45	0.21	6.09	0.46
1909 ...	0.37	0.35	0.96	0.59	0.47	0.21	6.70	0.47
1910 ...	0.40	0.36	0.99	0.61	0.48	0.21	7.42	0.49

### § 3. Cattle.

1. **Purposes for which Raised.**—In all the States of the Commonwealth cattle-raising is carried out on a more or less extensive scale, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry in the Commonwealth led to a considerable increase in the numbers and quality of the dairy herds of the States of Victoria, New South Wales, and Southern Queensland in particular, the sub-tropical portion of Australia being apparently the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts of the Commonwealth, *i.e.*, in the northern parts of Queensland, in the Northern Territory, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Commonwealth.**—Until 1880 New South Wales occupied the leading position in the Commonwealth group as a cattle-raising State, but in that year Queensland forged ahead and obtained a lead which it has since maintained. The extent of this lead has, however, varied considerably, owing principally to the effects produced by the tick fever and droughts, from both of which causes the Queensland herds suffered more severely than those of the other States. In fact, during the period from 1894, when the number of cattle in Queensland attained its maximum of rather more than 7,000,000, to 1903, when the number recorded was less than 2,500,000, an uninterrupted decline was experienced. During the past seven years, however, a rapid improvement has taken place, and the total reached on 31st December, 1910, was over 5,100,000.

The numbers of cattle in the several States and the Northern Territory at quinquennial intervals from 1860 to 1900 and thence onwards for each year are as follows :—

**NUMBER OF CATTLE IN STATES, NORTHERN TERRITORY AND COMMONWEALTH,  
1860 to 1910.**

Year.	N.S.W.	Victoria.	Queensland	S. Aust.	W. Aust.	Tasmania	Northern Territory.	C'wealth.
1860	2,408,586	722,332	432,890	278,265	32,476	83,866	...	3,957,915
1865	1,961,905	621,337	848,346	158,057	45,148	90,020	...	3,724,813
1870	2,195,096	721,096	1,076,630	136,832	45,213	101,459	...	4,276,326
1875	3,134,086	1,054,598	1,812,576	219,240	50,416	118,694	...	6,389,610
1880	2,580,040	1,286,267	3,162,752	283,315	63,719	127,187	*19,720	7,523,000
1885	1,317,315	1,290,790	4,162,652	271,478	70,408	133,642	146,562	7,397,847
1890	2,091,229	1,782,978	5,558,264	359,938	130,970	162,440	214,094	10,299,913
1895	2,150,057	1,795,314	6,822,401	355,867	200,091	162,801	280,957	11,767,488
1900	1,983,116	1,602,384	4,078,191	214,761	338,590	165,516	257,667	8,640,225
1901	2,047,454	1,623,282	3,772,707	225,256	398,547	168,661	255,521	8,491,428
1902	1,741,226	1,644,180	2,543,471	213,343	437,136	177,566	305,820	7,062,742
1903	1,880,578	1,665,078	2,481,717	244,610	497,617	185,938	291,970	7,247,508
1904	2,149,129	1,685,976	2,722,340	272,459	561,490	201,206	247,920	7,840,520
1905	2,337,973	1,737,690	2,963,695	304,027	631,825	206,211	346,910	8,528,331
1906	2,549,944	1,804,323	3,413,919	325,724	690,011	211,117	354,371	9,349,409
1907	2,751,193	1,842,807	3,892,232	334,671	717,377	215,523	374,683	10,128,486
1908	2,955,934	1,574,162	4,321,600	340,376	741,788	205,827	407,992	10,547,679
1909	3,027,727	1,549,640	4,711,782	344,034	793,217	199,945	414,046	11,040,391
1910	3,140,307	1,547,569	5,131,699	384,862	825,040	201,854	513,383	11,744,714

\* Statistics not collected prior to 1880.

**3. Proportion in each State.**—During the period elapsing between 1900 and 1910 the proportion of cattle in the several States and the Northern Territory has varied considerably, as shewn hereunder :—

**PERCENTAGE OF CATTLE IN EACH STATE AND NORTHERN TERRITORY ON  
TOTAL FOR COMMONWEALTH, 1900 to 1910.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T'ry.	C'wealth.
	%	%	%	%	%	%	%	%
1900	...	22.95	18.55	47.20	2.49	3.92	1.91	2.98
1901	...	24.11	19.12	44.43	2.65	4.69	1.99	3.01
1902	...	24.65	23.28	36.01	3.02	6.19	2.52	4.33
1903	...	25.95	22.97	34.24	3.37	6.87	2.57	4.03
1904	...	27.41	21.50	34.72	3.48	7.16	2.57	3.16
1905	...	27.42	20.37	34.75	3.56	7.41	2.42	4.07
1906	...	27.27	19.30	36.52	3.48	7.38	2.26	3.79
1907	...	27.16	18.20	38.43	3.30	7.08	2.13	3.70
1908	...	28.02	14.92	40.97	3.23	7.04	1.95	3.87
1909	...	27.42	14.04	42.68	3.12	7.18	1.81	3.75
1910	...	26.74	13.18	43.69	3.28	7.02	1.72	4.37

A comparison of the positions of the several States in 1900 and 1910 shews that, while Queensland's proportion of the Commonwealth herds and those of Victoria and Tasmania suffered diminution, fairly large increases were in evidence in New South Wales, South Australia, Western Australia and Northern Territory. The most noticeable increase in proportion is that of Western Australia, from 3.92% in 1900 to 7.02% in 1910.

4. **Imports and Exports of Cattle.**—Although the various products of the cattle-raising industry bulk largely in the export trade of the Commonwealth, the export of live cattle from Australia has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for breeding. One effect of this is that although considerably more than three times as many cattle were exported during the past ten years as were imported, the value of exports exceeded the value of imports by only £5335. Details are as follows :—

**COMMONWEALTH IMPORTS AND EXPORTS OF CATTLE, 1901 to 1910.**

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.*
		£		£		£
1901 ...	114	3,591	2,413	22,088	2,299	18,497
1902 ...	2,929	49,231	4,489	19,002	1,560	— 30,229
1903 ...	161	9,569	939	9,302	778	— 267
1904 ...	145	7,903	770	7,115	625	— 788
1905 ...	1,022	10,591	1,280	15,451	258	4,860
1906 ...	161	6,762	552	5,373	391	— 1,389
1907 ...	183	10,204	687	8,759	504	— 1,445
1908 ...	112	11,020	953	11,724	841	704
1909 ...	81	5,710	975	9,586	894	3,876
1910 ...	104	8,665	3,745	20,181	3,641	11,516
Total for 10 years.	5,012	123,246	16,803	128,581	11,791	5,335

\* — signifies net imports.

The average value of the cattle imported into the Commonwealth during the ten years was £24 11s. 10d. per head, while the average value of the cattle exported during the same period was £7 13s. 1d.

The comparatively large export figures for 1901 and 1902 were due to exports to Natal and Cape Colony.

5. **Cattle Slaughtered.**—Complete returns of the number of cattle slaughtered annually in the Commonwealth are not obtainable, as these particulars are collected in Tasmania for Hobart and Launceston only, and were collected in South Australia for the first time in 1908 in respect of the year 1907. Estimates for the missing data for these States have, however, been made, as shewn in the following table :—

**CATTLE (INCLUDING CALVES) SLAUGHTERED, COMMONWEALTH AND STATES, 1901 to 1910.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. <sup>1</sup>	W. Aust.	Tas.	C'wealth.
1901 ...	335,823	251,477	377,433	72,000	39,424	34,000	1,110,157
1902 ...	288,131	233,206	344,731	72,000	43,882	34,000	1,015,950
1903 ...	275,199	235,284	262,423	73,000	40,501	35,000	921,407
1904 ...	299,089	243,937	210,715	73,000	44,199	35,000	905,940
1905 ...	320,857	249,454	214,462	74,000	51,758	35,000	945,531
1906 ...	358,877	261,034	223,469	75,000	55,034	35,000	1,008,414
1907 ...	380,042	289,709	228,457	60,527	53,505	36,000	1,048,240
1908 ...	376,574	281,087	243,069	<sup>2</sup> 71,128	46,975	36,000	1,054,833
1909 ...	412,066	287,548	305,026	<sup>2</sup> 86,435	49,716	37,000	1,177,791
1910 ...	483,947	319,665	378,514	<sup>2</sup> 88,225	55,723	37,000	1,363,074

1. Estimated for the years 1901 to 1906. 2. Including Northern Territory.—1908 to 1910, 3759, 3975, and 4061 respectively.

For Hobart and Launceston only, the figures for the years 1901 to 1910 were, respectively, 8815, 10,193, 9842, 10,708, 12,035, 10,503, 12,037, 11,907, 10,059 and 11,569.

6. **Export of Beef Preserved by Cold Process.**—A large export trade in beef preserved by cold process is carried on by the Commonwealth, mainly with the United Kingdom, the Philippine Islands and the South African Union. The quantities so exported during the five years 1906 to 1910 are as follows:—

**QUANTITY OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM  
THE COMMONWEALTH, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ... ..	1,706,386	8,360,147	12,394,176	52,777,113	91,250,736	166,478,558
Philippine Islands ... ..	10,453,286	9,626,173	12,826,444	11,260,779	10,020,181	54,186,863
South African Union ... ..	14,301,248	19,353,278	4,316,387	1,698,046	3,784,637	43,453,596
Russia ... ..	10,247,609	10,551,438	6,821,701	...	...	27,620,748
Egypt ... ..	1,979,830	1,540,290	1,707,355	2,525,097	1,362,686	9,115,258
Straits Settlements ... ..	736,796	972,507	841,413	1,092,263	1,073,889	4,716,868
Malta ... ..	...	781,382	752,761	856,599	862,148	3,252,890
Gibraltar ... ..	1,247,683	345,374	...	130,703	70,908	1,794,668
Hong Kong... ..	188,873	286,499	354,934	920,919	385,895	1,437,120
Japan ... ..	121,963	5,283	408,141	102,723	22,119	660,329
Ceylon ... ..	148,300	86,688	87,948	56,509	99,564	479,009
Mauritius ... ..	391,664	...	...	...	...	391,664
Hawaiian Islands ... ..	6,681	4,257	...	105,403	71,606	187,947
Other countries ... ..	30,933	137,276	210,256	316,141	423,159	1,117,765
<b>Total ... ..</b>	<b>41,561,252</b>	<b>52,050,592</b>	<b>40,711,516</b>	<b>71,142,295</b>	<b>109,427,528</b>	<b>314,893,183</b>

The value of the beef preserved by cold process exported from the Commonwealth during the same years is as follows:—

**VALUE OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE  
COMMONWEALTH, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ... ..	15,896	87,903	134,014	533,044	967,662	1,738,519
Philippine Islands ... ..	112,546	108,505	151,076	125,052	126,719	623,898
South African Union ... ..	146,879	216,088	46,181	18,251	36,559	463,958
Russia ... ..	105,445	112,098	70,358	...	...	287,901
Egypt ... ..	22,027	19,135	19,770	26,747	14,582	102,261
Straits Settlements ... ..	8,080	11,515	9,820	11,899	12,452	53,766
Malta ... ..	...	8,852	7,987	8,690	9,790	35,319
Gibraltar ... ..	12,204	4,432	...	1,157	517	18,310
Hong Kong... ..	2,347	3,950	3,873	2,144	3,826	16,140
Japan ... ..	1,501	32	4,494	1,139	205	7,371
Ceylon ... ..	2,258	1,422	1,507	601	1,035	6,823
Mauritius ... ..	4,665	...	...	...	...	4,665
Hawaiian Islands ... ..	84	96	...	1,067	690	1,937
Other countries ... ..	523	1,704	2,471	3,419	5,109	13,226
<b>Total ... ..</b>	<b>434,455</b>	<b>575,732</b>	<b>451,551</b>	<b>733,210</b>	<b>1,179,146</b>	<b>3,374,094</b>

During the five years under review, the largest of Australia's customers for beef preserved by cold process has been the United Kingdom, while the most consistent and the second largest customer has been the Philippine Islands; the South African Union, Russia and Egypt ranked next in order of importance. The exporting States during 1910 were Queensland, 96,593,882 lbs., valued at £1,037,038; New South Wales, 8,745,361 lbs., valued at £97,878; and Victoria, 4,088,285 lbs., valued at £44,230.

7. **Comparison with other Countries.**—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case :—

#### NUMBER OF CATTLE IN VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle.	Country.	Date.	No. of Cattle.
British India <sup>1</sup> ...	1908	92,038,528 <sup>2</sup>	Bulgaria ...	1905	2,172,405 <sup>2</sup>
United States of America ...	1909	69,080,000	Cape Colony ...	1904	1,954,390
Russian Empire ...	1909	44,869,150	Belgium ...	1908	1,861,412
Argentine Republic ...	1908	29,116,625	Denmark ...	1903	1,840,466
Germany ...	1907	20,630,544	New Zealand ...	1908-9	1,773,326
Austria-Hungary <sup>3</sup> ...	1902 <sup>3</sup>	16,177,825	Netherlands ...	1904	1,690,463
France ...	1908	14,239,730	Ceylon ...	1909	1,509,554 <sup>2</sup>
United Kingdom ...	1909	11,761,830	Switzerland ...	1906	1,498,144
<b>Australia</b> ...	<b>1910</b>	<b>11,744,714</b>	Egypt ...	1909	1,458,400
Uruguay ...	1908	8,192,602	Japan <sup>5</sup> ...	1908	1,297,974
Canada <sup>4</sup> ...	1909	7,234,085	Norway ...	1907	1,094,101
Italy ...	1908	6,210,352 <sup>2</sup>	Algeria ...	1908	1,092,202
Mexico ...	1902	5,142,457	Servia ...	1905	969,953 <sup>2</sup>
Sweden ...	1908	2,685,020	British East Africa ...	1908	714,494
Rumania ...	1900	2,588,526 <sup>2</sup>	Transvaal ...	1908	670,284
Spain ...	1909	2,317,478	Orange River Colony	1907	585,077
Chile ...	1908	2,303,659	Natal ...	1908	538,413

1. Exclusive of Bengal.

2. Including buffaloes.

3. Austria 1902, Hungary 1909.

4. Exclusive of British Columbia.

5. Exclusive of Formosa.

8. **Relation to Population.**—The number of cattle per head of population differs considerably in the several States, and is also subject to marked variation from year to year in the same State. Particulars for the past ten years are as follows :—

#### NUMBER OF CATTLE PER HEAD OF POPULATION, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	Tas.	Northern Territory.	C'wealth.
1901 ...	1.49	1.34	7.44	0.63	2.06	0.96	5.47	2.22
1902 ...	1.24	1.36	4.97	0.60	2.06	0.99	6.84	1.82
1903 ...	1.32	1.38	4.79	0.69	2.21	1.02	6.90	1.85
1904 ...	1.48	1.40	5.19	0.76	2.36	1.09	5.89	1.97
1905 ...	1.57	1.44	5.58	0.84	2.53	1.11	8.57	2.11
1906 ...	1.71	1.48	6.33	0.89	2.70	1.14	9.08	2.29
1907 ...	1.81	1.49	7.13	0.90	2.82	1.14	10.03	2.43
1908 ...	1.89	1.26	7.76	0.88	2.86	1.08	11.42	2.49
1909 ...	1.88	1.21	8.15	0.88	2.99	1.04	11.82	2.55
1910 ...	1.91	1.21	8.57	0.95	2.98	1.04	15.55	2.65

For the Commonwealth as a whole the ratio of cattle to population is 19 per cent. greater for 1910 than for 1901, and has exhibited a continuous increase from 1902 onwards. The excess of the 1910 figures over those for 1901 is in evidence in all the States except Victoria, and is most marked in the case of the Northern Territory. In Queensland the ratio has increased very rapidly during the past seven years, the ratio per head of population for 1910 being 79 per cent. greater than for 1903. In Victoria the ratios for 1909 and 1910 are the lowest for the period under review.

### § 4. Sheep.

1. **The Founding of the Commonwealth Pastoral Industry.**—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though it would appear that the introduction of the Merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. **Distribution throughout Commonwealth.**—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained amongst the Commonwealth group the lead in sheep production which naturally attached to it as the portion of the Commonwealth in which settlement was first effected. From 1878 onwards, the number of sheep in New South Wales has, in every year except 1902, 1903, and 1910, represented more than half the total for the Commonwealth, and even in these years it fell but little short of half the total.

The number of sheep in the several States at quinquennial intervals from 1860 to 1900, and for each year onwards to 1910, is as follows:—

#### NUMBER OF SHEEP IN STATES, NORTHERN TERRITORY, AND COMMONWEALTH, 1860 to 1910.

Year.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Northern Territory	Total C'wealth.
1860 ...	6,119,163	5,780,896	3,449,350	2,824,811	260,136	1,700,930	...	20,135,286
1865 ...	8,132,511	8,835,380	6,594,966	3,779,308	445,044	1,752,719	...	29,539,928
1870 ...	16,308,585	10,761,887	8,163,818	4,400,655	608,892	1,349,775	...	41,593,612
1875 ...	25,353,924	11,749,532	7,227,774	6,179,395	881,861	1,731,723	...	53,124,209
1880 ...	35,398,121	10,360,285	6,935,967	6,443,904	1,231,717	1,796,715	*9,318	62,176,027
1885 ...	37,820,906	10,681,837	8,994,322	6,593,648	1,702,719	1,648,627	49,917	67,491,976
1890 ...	55,986,431	12,692,843	18,007,234	7,004,642	2,524,913	1,619,256	45,902	97,881,221
1895 ...	47,617,687	12,791,084	19,856,959	6,531,006	2,295,832	1,523,846	73,713	90,689,727
1900 ...	40,020,506	10,841,790	10,339,185	5,235,220	2,434,311	1,689,956	48,027	70,602,995
1901 ...	41,857,099	10,673,265	10,030,971	5,012,216	2,625,855	1,792,481	48,324	72,040,211
1902 ...	26,649,424	10,504,741	7,213,985	4,880,540	2,704,880	1,672,655	42,122	53,668,347
1903 ...	28,656,501	10,336,216	8,392,044	5,298,720	2,600,633	1,597,053	51,538	56,932,705
1904 ...	34,526,894	10,167,691	10,843,470	5,820,301	2,853,424	1,557,460	54,678	65,823,918
1905 ...	39,506,764	11,455,115	12,355,231	6,277,812	3,120,703	1,883,561	61,730	74,540,916
1906 ...	44,132,421	12,937,440	14,886,438	6,624,941	3,340,745	1,729,394	36,276	83,687,635
1907 ...	44,461,830	14,146,734	16,738,047	6,829,637	3,684,974	1,744,800	44,232	87,650,263
1908 ...	43,370,797	12,545,742	18,348,851	6,898,451	4,097,324	1,728,053	54,048	87,043,266
1909 ...	46,202,578	12,937,983	19,593,791	6,432,038	4,731,737	1,734,761	43,393	91,676,281
1910 ...	45,560,969	12,882,665	20,331,838	6,267,477	5,158,516	1,788,310	57,240	92,047,015

\* Statistics not collected prior to 1880.

3. **Proportion in the Several States.**—Particulars concerning the relative positions of the several States and the Northern Territory with respect to the total flocks of Australia, and the variations in such positions which have taken place during the past ten years, are as hereunder.



During the period the proportion of total Commonwealth flocks declined considerably in the case of New South Wales and Tasmania, and in a less marked degree in Victoria, South Australia, and the Northern Territory, while in the case of Queensland and Western Australia a marked advance in proportion was experienced.

**PERCENTAGE OF SHEEP IN EACH STATE AND NORTHERN TERRITORY ON TOTAL  
FOR COMMONWEALTH, 1901 to 1910.**

Year.	N.S.W.	Vic.	Q'nsland.	S. Aust.	W. Aust.	Tas.	Northern Territory.	C'wealth.
	%	%	%	%	%	%	%	%
1901	58.10	14.82	13.92	6.95	3.65	2.49	0.07	100.00
1902	49.66	19.57	13.44	9.09	5.04	3.12	0.08	100.00
1903	50.33	18.16	14.74	9.31	4.57	2.80	0.09	100.00
1904	52.45	15.45	16.47	8.84	4.33	2.37	0.09	100.00
1905	53.00	15.37	16.82	8.42	4.19	2.12	0.08	100.00
1906	52.73	15.46	17.79	7.92	3.99	2.07	0.04	100.00
1907	50.73	16.14	19.10	7.79	4.20	1.99	0.05	100.00
1908	49.83	14.41	21.08	7.93	4.71	1.98	0.06	100.00
1909	50.40	14.11	21.37	7.02	5.16	1.89	0.05	100.00
1910	49.50	14.00	22.09	6.81	5.60	1.94	0.06	100.00

**4. Oversea Imports and Exports of Sheep.**—As in the case of cattle, the oversea exports of live sheep from Australia are of comparatively small importance. The principal countries to which such exports have been consigned during recent years are South African Union, Straits Settlements, New Caledonia, and Papua. The following are the particulars of the imports and exports for the past ten years:—

**COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1901 to 1910.**

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901 ...	553	12,134	12,094	12,104	11,541	—30
1902 ...	47,654	66,042	24,296	15,558	—23,358	—50,484
1903 ...	4,727	9,840	18,111	24,468	13,384	14,628
1904 ...	2,614	13,056	7,746	11,219	5,132	—1,837
1905 ...	5,521	24,263	12,090	17,429	6,569	—6,834
1906 ...	11,502	51,403	17,979	48,699	6,477	—2,704
1907 ...	11,759	42,167	11,361	40,040	—398	—2,127
1908 ...	4,020	18,717	13,021	24,452	9,001	5,735
1909 ...	2,775	14,213	5,315	20,243	2,540	6,030
1910 ...	2,863	14,008	13,144	30,456	10,281	16,448
Total for 10 years	93,988	265,843	135,157	244,668	41,169	—21,175

Note. — signifies net imports.

**5. Sheep Slaughtered.**—The numbers of sheep slaughtered in the several States during the past ten years are as follows:—

## SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust. <sup>1</sup>	West Aust.	Tasmania. <sup>2</sup>	C'wealth.
1901	4,519,133	2,469,797	554,705	678,000	428,534	322,000	8,972,169
1902	4,635,850	2,827,938	715,443	681,000	482,882	325,000	9,668,113
1903	3,277,120	2,652,569	453,666	684,000	412,549	332,000	7,811,904
1904	3,058,536	2,305,729	400,688	691,000	499,585	334,000	7,289,538
1905	4,283,631	2,576,316	587,406	700,000	476,010	335,000	8,958,363
1906	4,482,055	2,826,144	449,547	710,000	468,759	335,000	9,271,505
1907	5,185,057	3,226,141	642,740	1,020,355	465,196	336,000	10,875,489
1908	5,201,492	3,309,865	705,776	1,213,168 <sup>3</sup>	423,056	340,000	11,193,357
1909	6,430,486	3,708,512	1,076,718	1,336,037 <sup>3</sup>	491,103	344,000	13,386,856
1910	7,470,002	4,245,881	1,751,151	1,316,904 <sup>3</sup>	549,977	346,000	15,679,915

1. Estimated for years 1901 to 1906.

2. Estimated.

3. Including Northern Territory, 1908 to 1910; 300,523, and 516 respectively.

For Hobart and Launceston only the figures for the years 1901 to 1910 were respectively:—101,627, 114,900, 122,233, 109,992, 101,863, 104,081, 107,859, 115,560, 111,445 and 119,456.

6. **Exports of Mutton and Lamb Preserved by Cold Process.**—Australia's export trade in mutton and lamb preserved by cold process is one which has, in recent years, advanced rapidly, and at the present time amounts to more than £2,100,000 per annum. In all the States considerable attention is now being paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and the Lincoln, or between the Merino and the Leicester breeds, have proved exceedingly valuable, as they furnish both a good quality of wool and also an excellent carcase for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs for the home markets, as it is becoming very widely recognised that with suitable breeds, the export trade in lambs is a very profitable one.

Australia's principal customers in this trade are the United Kingdom and South Africa, while in Egypt and Canada a demand for Australian mutton and lamb has developed in recent years. A regular, though not very extensive, trade is also done with the Philippine Islands. The quantities exported to various countries are as follows:—

**QUANTITY OF MUTTON AND LAMB PRESERVED BY COLD PROCESS EXPORTED  
FROM THE COMMONWEALTH, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	67,251,672	88,676,913	82,341,131	110,138,905	181,556,597	529,965,218
South African Union ...	19,324,547	14,445,797	5,823,602	2,458,029	2,720,584	44,272,559
Canada ...	969,352	2,215,533	719,336	1,138,974	2,309,441	7,352,636
Philippine Islands ...	552,233	791,154	673,867	682,116	788,577	3,487,947
Egypt ...	1,125,423	589,210	610,269	455,599	369,611	3,150,112
Malta ...	...	864,062	487,586	630,313	638,871	2,820,832
Straits Settlements...	243,508	511,813	471,634	568,684	713,836	2,509,475
Hong Kong ...	166,059	270,325	319,382	323,113	318,560	1,397,469
Hawaiian Islands ...	220,586	196,505	234,412	255,051	145,246	1,051,890
Ceylon ...	151,549	172,504	156,291	117,141	254,212	851,697
Gibraltar ...	285,510	168,453	...	67,190	52,590	573,743
Japan ...	86,612	35,600	89,805	22,789	18,681	253,577
Other Countries ...	315,334	289,798	180,299	57,735	142,494	985,660
<b>Total</b> ...	<b>90,692,385</b>	<b>109,227,757</b>	<b>91,607,614</b>	<b>116,915,639</b>	<b>190,229,330</b>	<b>598,672,725</b>

The corresponding particulars concerning the values of the exports are:—

**VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM THE COMMONWEALTH,  
1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ...	839,360	1,141,718	1,115,908	1,161,475	2,069,932	6,328,393
South African Union ...	207,832	159,298	55,293	23,578	28,935	474,936
Canada ...	12,260	30,216	10,257	14,646	23,132	90,511
Egypt ...	12,674	7,760	7,801	4,987	4,385	37,607
Philippine Islands ...	6,309	8,674	8,056	6,059	7,878	36,976
Malta ...	...	9,437	5,526	6,262	10,140	31,365
Straits Settlements ...	2,579	5,711	5,261	5,488	7,407	26,446
Hong Kong ...	1,906	3,011	3,487	2,997	3,288	14,689
Hawaiian Islands ...	3,282	3,275	2,927	2,994	1,783	14,261
Ceylon ...	1,713	2,802	1,722	1,096	2,649	9,982
Gibraltar ...	2,974	1,955	...	700	329	5,958
Japan ...	917	384	891	195	240	2,627
Other Countries ...	3,314	3,261	1,978	558	1,415	10,526
<b>Total ...</b>	<b>1,095,120</b>	<b>1,377,502</b>	<b>1,219,107</b>	<b>1,231,035</b>	<b>2,161,513</b>	<b>7,084,277</b>

**7. Comparison with other Countries.**—As regards the size of its flocks and the quantity and quality of wool produced, Australia occupies the foremost position amongst the sheep-raising countries of the world. The following comparison gives the latest available figures relative to the number of sheep in the principal wool-producing countries:—

**NUMBER OF SHEEP IN VARIOUS COUNTRIES.**

Country.	Date.	No. of Sheep	Country.	Date.	No. of Sheep.
<b>Australia</b> ...	<b>1910</b>	<b>92,047,015</b>	Rumania ...	1900	5,655,444
Argentine Republic ...	1908	67,211,754	Chile ...	1908	4,224,266
Russian Empire <sup>1</sup> ...	1909	62,371,579	British East Africa ...	1908	3,740,111
United States of America ...	1909	57,216,000	Mexico ...	1902	3,424,430
United Kingdom ...	1909	31,839,799	Servia ...	1905	3,160,163
Uruguay ...	1908	26,286,296	Transvaal ...	1908	2,811,061
New Zealand ...	1909	23,480,707	Canada <sup>4</sup> ...	1909	2,705,390
Cape Colony ...	1909	18,807,168	Norway ...	1907	1,393,488
British India <sup>2</sup> ...	1908	18,033,035	Sweden ...	1908	1,010,217
France ...	1908	17,456,380	Natal ...	1908	945,477
Spain ...	1909	15,471,183	Denmark ...	1903	876,830
Italy ...	1908	11,160,420	Falkland Islands ...	1908	688,705
Austria-Hungary <sup>3</sup> ...	{ 1902 1909 }	10,706,980	Netherlands ...	1904	606,785
Algeria ...	1908	9,632,177	Uganda ...	1908	559,590
Bulgaria ...	1905	8,130,997	Iceland ...	1904	495,190
Orange River Colony ...	1907	8,020,308	Belgium ...	1895	235,722
Germany ...	1907	7,703,710	Switzerland ...	1906	209,997

1. Including goats.  
of British Columbia.

2. Exclusive of Bengal.

3. Austria 1902, Hungary 1909.

4. Exclusive

**8. Relation to Population.**—The relation of the flocks of the several States and the Northern Territory to the populations at the end of each of the past ten years is as follows:—

## NUMBER OF SHEEP PER HEAD OF POPULATION.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
1901 ...	30.43	8.82	19.80	13.95	13.56	10.23	103.41	18.83
1902 ...	19.01	8.69	14.08	13.67	12.76	9.32	94.15	13.85
1903 ...	20.11	8.58	16.21	14.84	11.57	8.73	121.72	14.54
1904 ...	23.72	8.43	20.66	16.20	11.92	8.41	130.00	16.56
1905 ...	26.55	9.46	23.59	17.31	12.48	8.50	152.57	18.48
1906 ...	29.66	10.61	27.62	18.08	13.09	9.32	92.92	20.45
1907 ...	29.22	11.48	30.67	18.28	14.48	9.20	118.36	21.06
1908 ...	27.99	10.03	32.94	17.88	15.78	9.01	151.31	20.57
1909 ...	28.63	10.13	33.91	16.37	17.81	8.98	123.87	21.20
1910 ...	27.72	9.90	33.94	15.40	18.63	9.23	173.40	20.80

## § 5. Wool.

1. **Importance of Wool Production.**—The chief contributing factor to the pastoral wealth of Australia is the production of wool, the value of the output for the year 1910 being about £32,000,000. Most of the wool produced in the Commonwealth is exported, but with the increased activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents less than  $1\frac{1}{2}$  per cent. of the whole clip.

2. **Greasy and Scoured Wool.**—In the returns of imports and exports of wool furnished to the Customs Department the quantities are usually shewn as "greasy," or as "scoured and washed," but for the purpose of comparing the clips of the several States or of the Commonwealth as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The total quantity of Australian wool scoured and washed before export is, on the average of the last five years, about  $22\frac{1}{2}$  per cent. of the total clip. The ratio of loss of weight in scouring varies largely with season, locality, breed, and condition. It seems preferable to express "scoured and washed" wool in terms of "greasy" rather than *vice versa*, since the absolute error arising from any uncertainty as to the average loss of weight has thus the less effect.

3. **Total Production.**—In the following tables, relative to the production of wool for the five years 1906 to 1910, wool returned as "scoured and washed" has been converted into the estimated equivalent amount of "greasy" on the assumption that two pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed" wool. An allowance has also been made for the quantity of wool exported on sheepskins. On this basis the estimated total production of wool (in the grease) for the years 1906 to 1910 may be said to be as in the following table:—

## PRODUCTION OF WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND STATES, 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	332,380,646	375,224,448	344,550,707	379,388,356	}
Victoria ...	78,258,113	120,017,787	93,999,156	112,102,445	
Queensland ...	88,068,089	104,173,964	115,283,309	127,531,834	
South Australia ...	48,928,116	57,830,794	52,040,731	56,415,539	
Western Australia ...	17,437,645	22,013,541	22,450,624	30,048,360	
Tasmania ...	12,600,822	10,878,478	13,859,755	12,550,598	
Commonwealth ...	577,673,431	690,139,012	642,184,282	718,037,132	792,868,466

\* Details for individual States not available owing to discontinuance by Customs Department of statistics of Interstate trade.

4. **Wool Locally Used.**—Of this production the quantity used in the manufactories of the several States of the Commonwealth was approximately as follows:—

**LOCALLY USED WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND STATES,  
1906 to 1910.**

State.	1906.	1907.	1908.	1909.	1910.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ... ..	836,730	963,408	1,020,456	1,005,136	1,594,712
Victoria ... ..	4,765,687	5,600,873	6,152,250	5,239,806	5,309,790
Queensland ... ..	253,842	211,362	224,460	301,078	270,246
South Australia ... ..	387,264	603,848	672,112	634,250	564,432
Western Australia ... ..	...	...	...	...	...
Tasmania ... ..	1,005,628	923,572	1,244,879	991,388	1,087,400
Commonwealth ... ..	7,249,151	8,309,063	9,314,157	8,261,658	9,826,520

5. **Bounties on Combed Wool or Tops Exported.**—Under the Bounties Act 1907, bounties are payable on combed wool or tops exported from the Commonwealth, provided they were produced therein. The maximum amount which may be paid in any one year is £10,000. For the three years commencing 1st January, 1909, the rate of bounty granted is 1½d. per lb.; and for the two years commencing 1st January, 1912, 1d. per lb. is payable. During the year 1908-9, an amount of £326 was paid in bounties, in 1909-10 £4933 was paid, while in 1910-11 the amount so distributed was £8522. The quantities of wool on which these amounts were paid were 52,085, 789,216, and 1,363,520 lbs. respectively.

6. **Exports of Wool.**—About forty-five per cent. of the exports of wool from the Commonwealth are despatched to the United Kingdom, the other leading consignees being France, Germany, Belgium, and the United States of America. The following table shews for the years 1906 to 1910 the quantities of "greasy" wool exported from the Commonwealth to the principal countries of destination:—

**COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ... ..	193,740,722	227,246,663	225,336,019	210,353,060	222,880,179	1,079,556,643
France ... ..	85,755,279	130,937,517	104,210,690	128,402,229	154,091,890	603,397,605
Germany ... ..	56,479,224	71,423,340	80,073,180	102,160,121	132,297,188	432,433,053
Belgium ... ..	53,972,671	56,605,510	37,557,258	47,381,739	63,305,855	258,823,033
United States of America ... ..	21,090,888	18,401,395	20,430,274	32,846,145	11,079,242	103,847,944
Japan ... ..	2,465,742	5,905,962	1,972,449	5,320,455	7,869,785	23,534,393
Italy ... ..	1,184,080	1,546,395	1,548,760	1,915,644	3,710,785	9,905,564
India ... ..	162,724	212,759	394,236	271,030	485,990	1,526,739
New Zealand ... ..	183,845	55,208	62,775	135,954	1,122,446	1,560,228
Canada ... ..	173,944	264,513	254,300	157,263	208,269	1,058,289
Other Countries. ... ..	144,471	157,633	6,168	76,673	41,640	426,585
Total... ..	415,353,590	512,756,895	471,846,109	529,020,213	587,093,269	2,516,070,076

Similar particulars concerning the exports of "scoured and washed" wool are as follows:—

**COMMONWEALTH EXPORTS OF "SCOURED AND WASHED WOOL," 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ... ..	35,301,652	38,037,138	46,401,114	34,168,844	35,571,404	189,480,152
France ... ..	11,290,425	13,607,538	9,383,368	16,651,577	15,861,390	66,794,298
Germany ... ..	6,908,930	8,649,996	9,104,503	14,583,296	14,145,596	53,389,321
Belgium ... ..	9,098,036	9,288,704	5,157,465	7,661,482	11,418,895	42,624,582
Japan ... ..	2,106,820	2,490,953	722,217	635,722	887,292	6,843,004
Italy ... ..	99,663	85,937	65,361	148,695	212,661	612,317
India ... ..	68,007	151,851	70,828	74,876	41,962	407,524
United States of America ... ..	...	...	645	151,309	5,319	157,273
New Zealand ... ..	18,624	1,770	5,871	3,972	32,488	62,725
Other Countries ... ..	138	4,178	4,122	2,646	1,293	12,377
<b>Total... ..</b>	<b>64,889,295</b>	<b>72,318,065</b>	<b>70,915,494</b>	<b>74,082,419</b>	<b>78,178,300</b>	<b>360,383,573</b>

The figures for "scoured and washed wool" for 1909 include for the first time an export of tops, amounting to 496,492 lbs. and valued at £58,638. In 1910 the corresponding export was 1,123,469 lbs., valued at £134,874.

The total value of the wool exported from the Commonwealth to each of the various countries during the five years under review was:—

**TOTAL VALUE OF WOOL EXPORTED FROM THE COMMONWEALTH, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom ... ..	10,706,181	12,933,800	12,022,541	10,562,929	11,447,359	57,672,810
France ... ..	4,577,034	7,004,581	4,407,940	5,594,983	6,905,177	28,489,715
Germany ... ..	2,962,586	4,117,394	3,632,708	5,006,623	6,053,873	21,773,184
Belgium ... ..	3,113,778	3,417,193	1,742,639	2,230,206	3,084,847	13,588,663
United States of America ... ..	912,679	815,254	881,172	1,691,389	579,605	4,880,099
Japan ... ..	279,860	481,771	125,408	264,630	420,622	1,572,291
Italy ... ..	58,971	77,413	67,021	97,756	181,457	482,618
India ... ..	12,084	20,115	21,708	16,657	24,268	94,832
New Zealand ... ..	8,565	2,860	1,669	6,637	67,219	86,950
Canada ... ..	8,215	11,903	10,873	7,748	10,695	49,434
Other Countries ... ..	5,816	9,546	557	3,552	2,161	21,632
<b>Total ... ..</b>	<b>22,645,769</b>	<b>28,831,830</b>	<b>22,914,236</b>	<b>25,483,110</b>	<b>28,777,283</b>	<b>128,712,228</b>

**7. Care needed in Comparing Clips.**—The Customs returns, from which statistics of wool production are usually compiled, do not furnish a reliable indication of increase or decrease in successive clips, since in each case they relate to the year ended 31st December. Ordinarily, therefore, they include for any year imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips arises as follows:—Owing to climatic or other conditions, the time of shearing may be so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth. An instance of this occurred in some portions of the Commonwealth in connection with the clips of 1906 and 1907. The shearing in the former case was somewhat late, while in the latter it took place at the usual time, the result being that the 1906 clip was above and that of 1907 below the normal.

Similar circumstances operated to make the 1909 clip somewhat higher and the 1910 clip somewhat lower than would have been the case had the interval between successive shearings been exactly a year.

**8. Wool-producing Countries in Southern Hemisphere.**—The next table, compiled by Messrs. Helmuth Schwartz and Co., the well-known firm of English wool

brokers, furnishes interesting evidence of the relative importance of the three great wool-producing countries of the Southern Hemisphere. The figures given represent for the respective years the imports of wool into Europe and North America :—

#### IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA, 1901 to 1910.

Year.	Commonwealth and New Zealand.	Cape Colony.	River Plate.	Total
	Bales.	Bales.	Bales.	Bales.
1901 ... ..	1,745,000	217,000	532,000	2,494,000
1902 ... ..	1,699,000	234,000	512,000	2,445,000
1903 ... ..	1,451,000	234,000	558,000	2,243,000
1904 ... ..	1,371,000	201,000	476,000	2,048,000
1905 ... ..	1,633,000	209,000	488,000	2,330,000
1906 ... ..	1,833,000	238,000	487,000	2,558,000
1907 ... ..	2,103,000	287,000	478,000	2,868,000
1908 ... ..	2,072,000	276,000	484,000	2,832,000
1909 ... ..	2,296,000	380,000	571,000	3,247,000
1910 ... ..	2,411,000	377,000	461,000	3,249,000

It will be seen that of the total importations shewn in this table, the Commonwealth of Australia and the Dominion of New Zealand account for about 70 per cent.

9. **United Kingdom Importation of Wool.**—The quantity and value of wool imported into the United Kingdom during the year 1910 from the principal wool-producing countries, furnish evidence of the important position which the Commonwealth occupies in the supply of wool to the mother country. This is shewn in the following table :—

#### IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1910.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ... ..	314,517,042	14,273,939	Peru ... ..	3,031,752	128,793
New Zealand ... ..	189,680,851	8,526,757	Russia ... ..	3,798,031	125,226
Cape Colony ... ..	79,659,514	3,065,950	Egypt ... ..	3,682,030	99,896
France ... ..	27,587,988	1,679,316	Portugal ... ..	2,712,492	93,638
British India ... ..	53,334,001	1,448,636	China ... ..	2,418,014	83,131
Argentine Republic ... ..	32,382,184	1,261,061	Netherlands ... ..	842,206	30,712
Natal ... ..	24,614,953	864,796	Canada ... ..	804,930	30,124
Chile ... ..	24,863,833	808,833	Italy ... ..	555,081	23,376
Turkey ... ..	9,501,945	267,005	Persia ... ..	419,000	12,349
Belgium ... ..	4,734,796	223,545	Spain ... ..	252,511	8,099
Germany ... ..	3,431,000	170,378	Other Countries ... ..	2,560,096	92,879
U.S. of America ... ..	3,707,459	168,454			
Falkland Islands ... ..	4,839,600	166,725			
Uruguay ... ..	3,487,094	157,919	Total ... ..	797,418,403	33,811,537

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented about 39 per cent. of quantity and 42 per cent. of value.

10. **The Wool Market.**—About 83 per cent. of the wool grown in Australia is now disposed of at the local sales held in Sydney, Melbourne, Geelong, Brisbane, Adelaide, Fremantle, Hobart and Launceston. These sales are attended by buyers from England and America, as well as by representatives of the principal European manufacturing countries. The market for wool, which had been for some years steadily improving, received a severe set-back in the early portion of the season 1907-8 by the disastrous financial crisis which occurred in America soon after the commencement of that season. The result was that buying was restricted, prices fell, and a considerable quantity of

wool was withdrawn from sale and held over until the succeeding season. The season 1908-9 consequently opened rather inauspiciously, but, although prices did not reach the high level attained in 1906-7, the demand, particularly in the latter part of the season, was much more spirited than in 1907-8, and the sales must be regarded as having been very satisfactory. The season 1909-10 opened favourably and prices exhibited a distinctly upward tendency, with the result that the price averaged over 20 per cent. more than was obtained during the preceding year. The 1910-11 season opened with a fall of 10 per cent. on the closing rates of the previous season; values gradually recovered before the middle of the series, when wool was selling almost as well as at any period of the previous year; prices again declined  $7\frac{1}{2}$  to 10 per cent., but made a good recovery towards the close of the season, the average for the year being 8 per cent. below that of the previous year.

During the sales of 1910-11 the prices realised for greasy merino wool ranged up to 18 $\frac{1}{2}$ d. per lb. for a few lines of extra super. Western District (Victoria) wool, super, to 14 $\frac{1}{2}$ d., good to 12 $\frac{1}{2}$ d., average to 12d., and inferior from 6 $\frac{1}{2}$ d. to 8d. Amongst other classes of wool extra super. comebacks brought as high as 15 $\frac{1}{2}$ d., and super. 14 $\frac{1}{2}$ d. Super. crossbreds sold up to 14 $\frac{1}{2}$ d., fine to 12 $\frac{1}{2}$ d., medium to 10d., and coarse to 9 $\frac{1}{2}$ d. Scoured wool ranged from 16d. to 23 $\frac{1}{2}$ d.

The average values per lb. of Australian greasy wool according to the export returns for the past ten years have been as follows:—

**EXPORT VALUE PER LB. OF AUSTRALIAN GREASY WOOL, 1901 to 1910.**

Year	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Average value per lb.	d. 7.27	d. 8.04	d. 8.75	d. 9.30	d. 9.83	d. 10.14	d. 10.73	d. 9.17	d. 9.35	d. 9.58

**§ 6. Hides and Sheepskins.**

1. **Extent of Trade.**—In addition to the hides and sheepskins treated in the tanneries of the several States, a very considerable export trade is carried on, the total value of the hides and sheepskins exported from Australia during the five years 1906 to 1910 being no less a sum than £10,030,115, or an average of £2,006,023 per annum.

2. **Sheepskins with Wool.**—By far the largest item included in the amount mentioned in the preceding paragraph arises from the value of sheepskins with wool exported, which are shipped principally to France and the United Kingdom. Details concerning the number so exported during the five years 1906 to 1910 are as follows:—

**COMMONWEALTH EXPORTS OF SHEEPSKINS WITH WOOL, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
France ...	2,742,973	3,561,771	3,265,111	3,140,764	4,325,337	17,035,956
United Kingdom ...	2,369,247	2,711,346	3,522,791	3,968,494	3,763,002	16,334,880
Belgium ...	675,051	957,819	710,902	1,100,023	1,282,942	4,726,737
Germany ...	48,683	57,909	124,465	57,041	106,534	394,632
U.S. of America...	16,228	27,833	11,041	86,664	155,782	297,548
Italy ...	5,771	6,906	44,083	27,565	29,575	113,900
Canada...	1,450	4,268	...	...	10,446	16,164
New Zealand ...	1,469	...	225	...	100	1,794
Other Countries ...	65	152	...	234	...	451
Total ...	5,860,937	7,328,004	7,678,618	8,380,785	9,673,718	38,922,062



The next table furnishes corresponding particulars as to value :—

**VALUE OF SHEEPSKINS WITH WOOL EXPORTED FROM THE COMMONWEALTH,  
1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
	£	£	£	£	£	£
France ...	655,044	760,421	508,477	598,172	884,450	3,406,564
United Kingdom	587,648	628,318	515,937	737,592	710,229	3,179,724
Belgium ...	206,037	243,988	123,456	274,823	316,958	1,165,262
Germany ...	7,890	10,446	23,338	9,566	16,720	67,960
U.S. of America...	2,740	5,981	1,058	9,836	16,978	36,593
Italy ...	2,583	2,244	10,621	10,244	9,630	35,322
Canada...	335	634	...	...	1,071	2,040
New Zealand ...	542	...	25	...	25	592
Other Countries ...	13	26	...	63	...	102
<b>Total ...</b>	<b>1,462,832</b>	<b>1,652,058</b>	<b>1,182,912</b>	<b>1,640,296</b>	<b>1,956,061</b>	<b>7,894,159</b>

3. **Sheepskins without Wool.**—In the case of sheepskins without wool the principal countries to which export takes place are the United Kingdom and the United States of America. Particulars concerning the quantities exported are as follows :—

**COMMONWEALTH EXPORTS OF SHEEPSKINS WITHOUT WOOL, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom ...	1,374,208	2,370,759	1,086,103	1,140,338	875,994	6,847,402
United States of America	708,518	219,296	167,460	1,285,946	710,001	3,091,221
France ...	...	2,804	101,767	3,315	23,863	131,749
New Zealand ...	66	2,522	5,040	9,840	15,552	33,020
Germany ...	3,160	684	2,812	...	14,447	21,103
Belgium ...	...	1,080	...	...	8,428	9,508
Canada ...	...	600	...	1,068	1,956	3,624
Italy ...	...	72	...	...	...	72
Other Countries	132	1,020	475	...	...	1,627
<b>Total ...</b>	<b>2,086,084</b>	<b>2,598,837</b>	<b>1,363,657</b>	<b>2,440,507</b>	<b>1,650,241</b>	<b>10,139,326</b>

Corresponding details concerning value are given hereunder :—

**VALUE OF SHEEPSKINS WITHOUT WOOL EXPORTED FROM THE COMMONWEALTH,  
1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom ...	101,030	176,484	62,605	50,077	37,015	427,211
United States of America	50,155	19,191	7,390	57,795	22,544	157,075
France ...	...	210	7,477	312	1,711	9,710
New Zealand ...	9	248	272	422	514	1,465
Germany ...	426	22	184	...	538	1,170
Belgium ...	...	103	...	...	396	499
Canada ...	...	37	...	50	115	202
Italy ...	...	8	...	...	...	8
Other Countries	11	72	38	...	...	121
<b>Total ...</b>	<b>151,631</b>	<b>196,375</b>	<b>77,966</b>	<b>108,656</b>	<b>62,833</b>	<b>597,461</b>

4. **Hides.**—The Commonwealth trade in hides has now assumed considerable proportions, and during 1910 the total value of hides exported amounted to £456,045. The exports took place principally to the United Kingdom, Belgium, Germany, Italy, the United States of America, and France. Large quantities of hides are also imported into the Commonwealth, mainly from New Zealand and the Pacific Islands. The total value of hides imported during 1910 was £169,771.

Particulars concerning the export of hides during the past five years are as follows:—

**COMMONWEALTH EXPORTS OF HIDES, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom	36,162	73,603	152,107	196,827	253,442	717,141
Belgium ...	33,551	52,507	63,377	79,977	41,326	270,738
Germany ...	30,721	22,098	99,745	47,335	21,810	221,709
Italy ...	26,378	36,749	43,156	11,316	45,541	163,140
U.S. of America...	7,575	10,118	15,012	56,131	21,318	110,154
France ...	6,675	2,841	20,971	20,546	11,938	62,971
Japan ...	3,507	5,867	1,670	6,598	4,697	22,339
Canada ...	3,080	4,586	1,050	3,737	4,000	16,453
Austria-Hungary	1,534	3,363	5,998	515	...	11,410
Sth. African Union	...	100	50	200	...	350
Other Countries...	1,875	469	24	166	1,975	4,509
<b>Total ...</b>	<b>151,058</b>	<b>217,301</b>	<b>403,160</b>	<b>423,348</b>	<b>406,047</b>	<b>1,600,914</b>

In the next table are given particulars relative to the value of hides exported:—

**VALUE OF HIDES EXPORTED FROM THE COMMONWEALTH, 1906 to 1910.**

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	40,106	72,693	106,619	177,738	294,702	691,858
Belgium ...	44,662	57,242	54,674	89,547	48,343	294,468
Germany ...	27,789	21,251	68,413	42,710	23,947	184,110
Italy ...	26,361	28,702	24,891	8,333	41,983	130,270
U.S. of America...	8,614	7,969	12,079	56,639	21,988	107,289
France ...	7,434	2,782	15,205	22,805	11,073	59,299
Japan ...	5,650	11,327	2,235	10,315	7,873	37,400
Canada ...	3,959	4,795	1,127	3,591	4,049	17,521
Austria-Hungary	1,795	3,137	5,360	627	...	10,919
Sth. African Union	...	100	42	260	...	402
Other Countries...	2,127	497	23	225	2,087	4,959
<b>Total ...</b>	<b>168,497</b>	<b>210,495</b>	<b>290,668</b>	<b>412,790</b>	<b>456,045</b>	<b>1,538,495</b>

The number and value of hides imported into the Commonwealth during the five years 1906 to 1910 are as follows:—

**HIDES IMPORTED INTO THE COMMONWEALTH, 1906 to 1910.**

Year.	1906.	1907.	1908.	1909.	1910.	Total for 5 Years.
No. ...	149,502	183,678	183,362	136,375	119,408	772,325
Value ...	£ 178,261	220,574	204,358	173,251	169,771	946,215

## § 7. Graphical Representation of Pastoral Production.

1. **General.**—As comparatively complete statistics relative to the number of horses, cattle, sheep and pigs are available from 1860, the graphical representation of the increase in numbers for the Commonwealth as a whole, shewn on page 357, covers the period from 1860 to 1910.

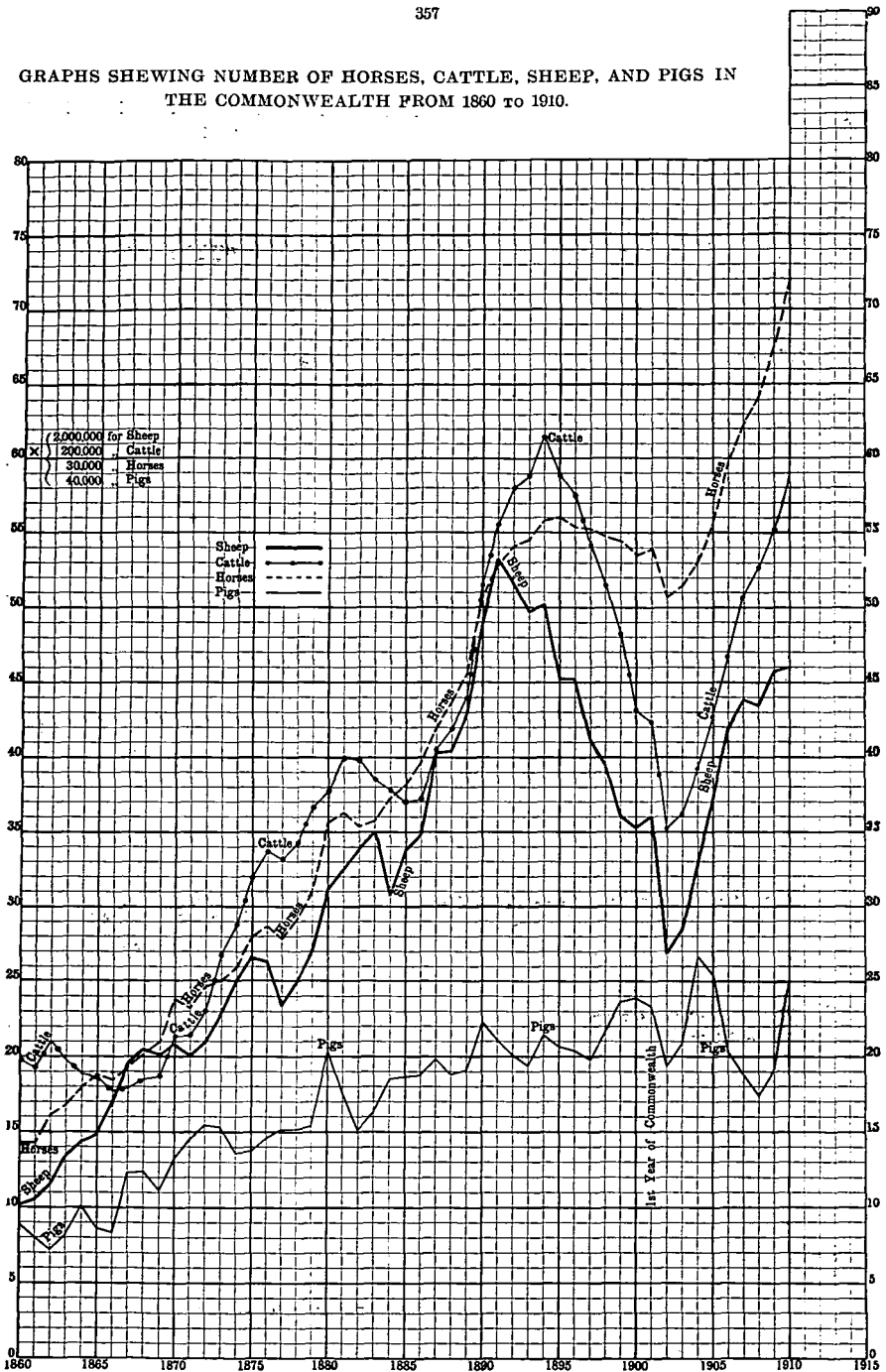
2. **Horses.**—With relatively unimportant fluctuations the number of horses in the Commonwealth increased at a fairly consistent rate until 1895, when a decline set in, culminating in the losses of the disastrous drought of 1902. At this latter point the number was practically identical with that for 1890. From 1902 onwards a rapid improvement has been experienced, and in 1906 the previous maximum attained in 1895 was passed. Previous periods of decline were experienced in 1866, 1871, 1877 and 1882.

3. **Cattle.**—The graph for cattle furnishes evidence of rapid increase in number, interrupted by three marked periods of decline, of which the first extended from 1862 to 1866, the second from 1881 to 1885, and the third from 1894 to 1902. So extensive was this last-mentioned decline that the number receded to that of 1879. Since 1902 a rapid recovery has been effected, and the total for 1910 closely approximates to that existing at the end of the year 1895, though still short of the maximum attained in 1894.

4. **Sheep.**—In the case of sheep the graph furnishes evidence of four periods in which the upward movement in number has been arrested or reversed. The first of these occurred between 1868 and 1871, the second between 1875 and 1877, the third during 1884, and the fourth, by far the most serious, between 1891 and 1902. From 1902 to 1907 a rapid increase took place, succeeded by a slight decline in 1908, and a rapid advance in 1909 and 1910. The point now reached corresponds approximately with that attained in the latter portion of 1895.

5. **Pigs.**—The graph for pigs exhibits more numerous fluctuations than that for either of the other classes of live stock represented, and from 1904 to 1908 furnished evidence of a persistent decline. In 1909, however, an upward movement took place, the total for that year being higher than that for either of the two preceding years, while that for 1910 is the highest recorded for any year, with the exception of 1904.

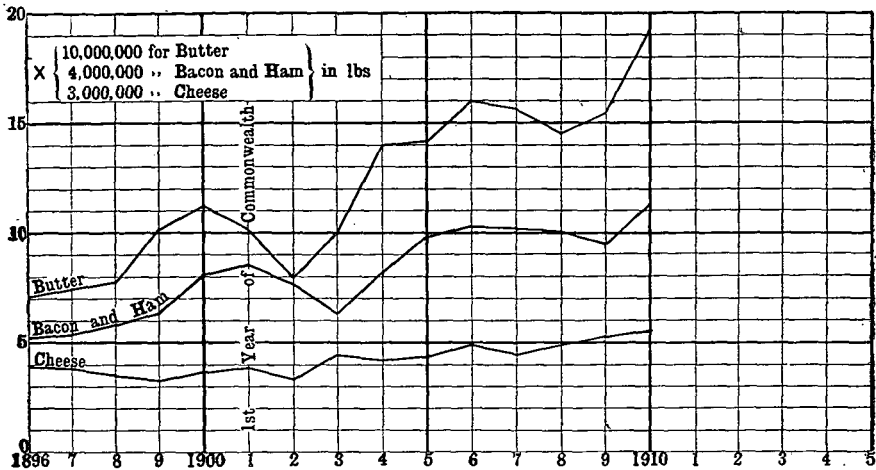
GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS IN  
THE COMMONWEALTH FROM 1860 TO 1910.



(See pages 338, 341, 345, and 444.)

**EXPLANATION OF GRAPH.**—The base of each small square represents an interval of one year. The totals of the sheep, cattle, horses, and pigs for the Commonwealth are indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 30,000 for horses; 40,000 for pigs.

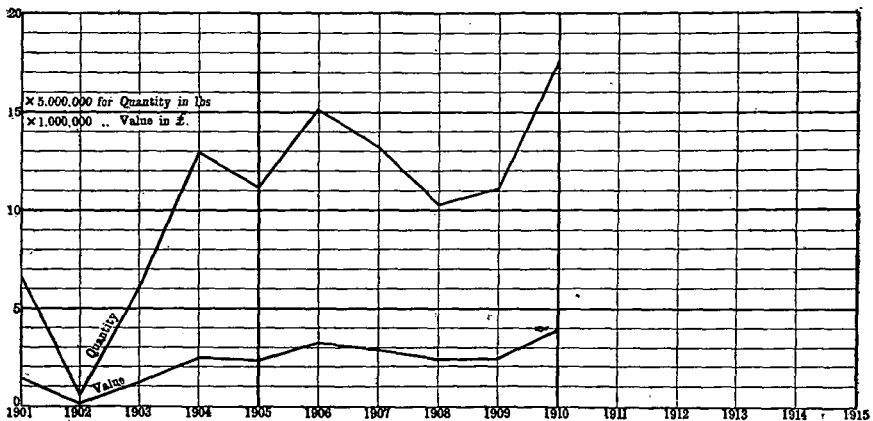
GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 TO 1910.



(See page 446.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each rectangle denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese, 3,000,000 lbs.

GRAPHS SHEWING THE QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM THE COMMONWEALTH, FROM 1901 TO 1910.



(See page 450.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle represents 5,000,000 lbs. in weight, or £1,000,000 in value.

## SECTION VIII.

### AGRICULTURAL PRODUCTION.

#### § 1. Introductory.

**1. Early Attempts at Agriculture.**—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil "under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions." When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook's expedition of the fertility of the soil in that locality were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

**2. The First Sowing.**—In his despatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow eight acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

**3. Discovery of Suitable Agricultural Land.**—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here corn crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill at the end of December, 1789, as consisting of 200 bushels of wheat and sixty of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about three miles westward of Parramatta, where Phillip states "there are several thousand acres of exceeding good ground." The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

#### § 2. Progress of Agriculture.

**1. Early Records.**—In an "Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797," Governor Hunter gives the acreage under crop as follows:—Wheat, 3361 acres; maize, 1527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6877 acres; maize, 3389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 34 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling-off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

**2. Progress of Cultivation since 1860.**—The following table shews the area under crop in each of the Commonwealth States at quinquennial intervals since 1860 and during each year of the period 1901-11. The area under permanent artificially-sown grasses is excluded in all the States, except for the years 1860-79 in the case of New South Wales, where the acreage cannot be separated. During those years, however, the area laid down under permanent grasses could not have been very large:—

#### AREA UNDER CROP IN AUSTRALIA, 1860-1 to 1910-11.

Season.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tas- mania.	Common- wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1 ...	260,798	387,282	3,353	359,284	24,705	152,860	1,188,282
1865-6 ...	378,255	448,194	14,414	547,124	38,180	159,547	1,585,714
1870-1 ...	426,976	692,840	52,210	801,571	54,527	157,410	2,185,534
1875-6 ...	451,139	736,520	77,347	1,111,882	47,571	142,547	2,567,006
1880-1 ...	629,180	1,548,809	113,978	2,087,237	57,707	140,788	4,577,699
1885-6 ...	737,701	1,867,496	198,334	2,298,412	60,058	144,761	5,306,762
1890-1 ...	852,704	2,031,955	224,993	2,093,515	69,678	157,376	5,430,221
1895-6 ...	1,348,600	2,413,235	285,319	2,092,942	97,821	212,703	6,450,620
1900-1 ...	2,445,564	3,114,132	457,397	2,369,680	201,838	224,352	8,812,463
1901-2 ...	2,278,370	2,965,681	483,460	2,236,552	217,441	232,550	8,414,054
1902-3 ...	2,249,092	3,246,568	275,383	2,224,593	229,992	246,923	8,472,551
1903-4 ...	2,545,940	3,389,069	566,589	2,256,824	283,752	259,611	9,301,785
1904-5 ...	2,674,896	3,321,785	539,216	2,275,506	327,391	226,228	9,365,022
1905-6 ...	2,840,235	3,219,962	522,748	2,255,569	364,704	230,237	9,433,455
1906-7 ...	2,826,657	3,303,586	559,753	2,157,235	460,825	244,744	9,552,800
1907-8 ...	2,572,873	3,232,523	532,624	2,265,017	493,837	257,028	9,353,902
1908-9 ...	2,717,085	3,461,761	535,900	2,321,812	585,339	269,346	9,891,243
1909-10 ...	3,180,561	3,658,535	606,790	2,530,301	722,086	274,026	10,972,299
1910-11 ...	3,386,017	3,952,070	667,113	*2,746,694	855,024	286,920	11,893,838

\* Including Northern Territory, 360 acres.

The increase in the area under crop during the past ten years has been most marked in the case of New South Wales, the total advancing from 2,445,564 acres in the season 1900-1 to 3,386,017 in 1910-11, an increase of 940,453 acres. During the same period an increase of 837,938 acres was experienced in Victoria, 653,686 acres in Western Australia, 376,654 acres in South Australia, 209,716 in Queensland, and 62,568 acres in Tasmania. The total area under crop in the Commonwealth increased during the period by 3,081,375 acres, and the total for 1910-11 was the highest ever attained by the Commonwealth. The 1910-11 figures were also the highest ever attained by any of the States.

3. **Relation to Population.**—From the following table it will be seen that for the Commonwealth as a whole the area under crop has, during the past ten seasons, increased at a rate which is somewhat greater than that at which the population of the Commonwealth has increased. This relatively greater increase is in evidence in all the States, being most marked in the case of Western Australia, which has now a larger area under crop per head of population than any State except South Australia. Details for the ten seasons are as follows:—

#### TOTAL AREA UNDER CROP PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	1,656	2,451	954	6,224	1,123	1,327	2,200
1902-3 ...	1,604	2,687	538	6,231	1,085	1,376	2,186
1903-4 ...	1,786	2,813	1,094	6,321	1,263	1,419	2,375
1904-5 ...	1,838	2,755	1,027	6,332	1,368	1,222	2,356
1905-6 ...	1,909	2,660	984	6,220	1,458	1,235	2,339
1906-7 ...	1,900	2,708	1,039	5,886	1,806	1,320	2,335
1907-8 ...	1,691	2,622	976	6,062	1,940	1,356	2,248
1908-9 ...	1,740	2,769	962	6,018	2,254	1,405	2,337
1909-10 ...	1,971	2,865	1,050	6,440	2,718	1,419	2,538
1910-11 ...	2,060	3,037	1,114	6,750	3,089	1,480	2,688

4. **Relation to Total Area.**—The next table furnishes a comparison of the area under crop in the Commonwealth and the several States with the respective total areas. For the Commonwealth as a whole the area under crop represented for 1910-11 only about one acre in every 160. In Victoria the area under crop was about one acre in every 14, in Tasmania one in 58, in New South Wales one in 59, in South Australia one in 89, in Queensland one in 643, and in Western Australia one in 730.

#### PERCENTAGE OF AREA UNDER CROP TO TOTAL AREA OF EACH STATE AND OF COMMONWEALTH FOR SEASONS 1901-2 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.*	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1901-2 ...	1.147	5.273	0.113	0.919	0.035	1.386	0.442
1902-3 ...	1.132	5.772	0.064	0.915	0.037	1.472	0.445
1903-4 ...	1.282	6.025	0.132	0.928	0.045	1.547	0.489
1904-5 ...	1.347	5.906	0.126	0.935	0.052	1.348	0.492
1905-6 ...	1.430	5.725	0.122	0.927	0.058	1.372	0.496
1906-7 ...	1.423	5.873	0.130	0.887	0.074	1.459	0.501
1907-8 ...	1.295	5.747	0.124	0.931	0.079	1.532	0.491
1908-9 ...	1.368	6.155	0.125	0.955	0.094	1.605	0.520
1909-10 ...	1.601	6.505	0.141	1.040	0.116	1.633	0.576
1910-11 ...	1.705	7.026	0.155	1.129	0.137	1.710	0.625

\* Exclusive of Northern Territory.

5. **Artificially-Sown Grasses.**—In all the States considerable areas are devoted to artificially-sown grasses, frequently sown on uncultivated land after burning off. Complete statistics regarding the area under such grasses are available for the whole of the States only since the year 1896, and are as shewn hereunder:—



## AREA UNDER SOWN GRASSES, 1896-7 to 1910-11.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1896-7	384,016	172,582	11,960	20,027	4,044	253,306	845,935
1901-2	467,839	162,954	34,679	23,510	3,711	314,422	1,007,115
1902-3	477,629	565,635	24,286	23,636	3,228	319,090	1,413,504
1903-4	552,501	962,665	15,639	24,118	2,952	343,284	1,901,159
1904-5	607,997	953,543	35,589	24,912	3,964	378,346	2,004,351
1905-6	627,530	1,040,335	40,802	26,082	5,456	404,653	2,144,858
1906-7	697,631	1,095,642	45,990	23,679	6,787	432,128	2,301,857
1907-8	736,080	1,095,471	76,943	34,635	7,990	465,673	2,416,792
1908-9	807,924	1,029,711	82,784	23,297	10,265	491,422	2,445,403
1909-10	888,937	988,671	108,438	23,343	9,017	439,450	2,457,856
1910-11	1,055,303	991,195	140,196	26,416	8,348	493,233	2,714,691

The considerable increase in the area of the grass lands of the Commonwealth is due in large measure to the great development of the dairying industry which has taken place during the last ten years, and which is referred to in the succeeding section. The areas contained in the above table relate in most cases to grasses sown for grazing purposes on uncultivated land, generally after burning off, and are consequently not included with "area under crop."

## § 3. Relative Importance of Crops.

1. **Various Crops.**—In the following table are furnished details concerning the areas in the several States under each of the principal crops for the season 1910-11 :—

## DISTRIBUTION OF CROPS IN AUSTRALIA, 1910-11.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total for C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ...	2,128,826	2,398,089	106,718	2,104,717	581,862	52,242	2	7,372,456
Oats ...	77,961	392,681	2,537	77,674	61,918	63,887	...	676,688
Maize ...	213,217	20,151	180,862	619	46	...	19	414,914
Barley—								
Malting ...	4,981	30,609	3,222	23,245	1,449	3,902	...	67,408
Other ...	2,101	22,078	2,356	11,228	1,920	1,333	...	41,016
Beans and Peas	275	11,068	55	9,957	843	20,041	...	42,239
Rye ...	4,193	2,640	105	1,043	762	1,261	...	10,004
Other Cereals ...	...	...	2	202	41	...	12	257
Hay ...	638,577	832,669	98,558	440,177	175,432	72,992	...	2,258,405
Green Forage ...	179,382	71,826	89,667	20,728	4,545	8,695	19	374,862
Grass Seed ...	5	1,295	1,169	17	...	1,775	...	4,261
Orchards & other								
Fruit Gardens	47,533	57,375	15,153	22,410	16,738	25,934	13	185,156
Vines—								
Productive ...	7,518	20,024	1,528	20,367	2,393	...	...	51,830
Unproductive	803	3,388	106	2,585	402	...	...	7,284
Market Gardens	9,813	10,778	2,317	2,818	3,576	1,741	58	31,101
Sugar Cane—								
Productive ...	5,596	...	94,641	...	...	...	...	100,237
Unproductive	8,167	...	47,138	...	...	...	...	55,305
Potatoes ...	44,452	62,904	8,326	7,812	1,791	26,230	...	151,515
Onions ...	241	6,161	101	270	29	62	...	6,864
Other root crops	694	2,584	4,439	349	123	5,774	2	13,965
Tobacco ...	1,096	329	655	...	...	...	...	2,080
Broom Millet ...	4,467	650	422	...	...	...	...	5,569
Pumpkins and								
Melons ...	5,070	2,477	4,160	...	282	...	...	11,980
Hops ...	...	121	...	3	...	1,039	...	1,163
All other crops	1,019	2,142	2,876	113	872	12	235	7,270
<b>Total Area...</b>	<b>3,386,017</b>	<b>3,952,070</b>	<b>667,113</b>	<b>2,746,334</b>	<b>855,024</b>	<b>286,920</b>	<b>360</b>	<b>11,893,838</b>

2. **Relative Areas of Crops in States.**—Taking the principal crops, *i.e.*, those in the case of which the cultivation amounts to more than 50,000 acres in the Commonwealth, the proportion of each in the various States to the total area under crop for the season 1910-11 is shewn in the next table. In four of the States, *viz.*, New South Wales, Victoria, South Australia, and Western Australia, wheat-growing for grain is by far the most extensive form of cultivation, while in each of these States the hay crop is second in importance. In New South Wales maize ranks third, but in Victoria, South Australia, and Western Australia, and also in the Commonwealth as a whole, the oat crop occupies third position. In Queensland, on the other hand, the three principal crops in the order of importance are maize, sugar cane, and wheat, while in Tasmania hay, oats, and wheat occupy the leading positions. For the Commonwealth as a whole, the wheat, hay, and oat crops represent nearly 87 per cent. of the total area under crop.

**PROPORTION OF AREA UNDER CHIEF CROPS, 1910-11.**

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
	%	%	%	%	%	%	%	%
Wheat ...	62.87	60.68	16.00	76.64	68.05	18.21	...	61.99
Hay ...	18.86	21.07	14.77	16.03	20.52	25.44	...	18.99
Oats ...	2.30	9.94	0.38	2.83	7.24	22.27	...	5.69
Maize ...	6.30	0.51	27.11	0.02	...	...	5.28	3.49
Green Forage	5.30	1.82	13.44	0.75	0.53	3.03	5.28	3.15
Orchards and Fruit G'dens	1.40	1.45	2.27	0.82	1.96	9.04	3.61	1.56
Sugar Cane...	0.41	...	21.25	...	...	...	...	1.31
Potatoes ...	1.31	1.59	1.25	0.28	0.21	9.14	...	1.27
Barley ...	0.21	1.33	0.84	1.26	0.39	1.82	...	0.91
Vineyards ...	0.25	0.59	0.24	0.84	0.33	...	...	0.50
All Other ...	0.79	1.02	2.45	0.53	0.77	11.05	85.83	1.14
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. **Acreage of Principal Crops, Commonwealth.**—The acreage devoted to each of the principal crops in the whole Commonwealth during the last five seasons is shewn below:—

**ACREAGE OF CHIEF COMMONWEALTH CROPS, 1906-7 to 1910-11.**

Crop.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ...	5,977,794	5,383,911	5,262,473	6,586,236	7,372,456
Hay ...	1,654,399	1,811,579	2,452,682	2,228,029	2,258,405
Oats ...	581,843	642,814	676,156	698,448	676,688
Maize ...	325,581	299,579	323,875	364,585	414,914
Green Forage	236,484	439,725	413,511	306,082	374,862
Orchards and Fruit Gardens	162,274	169,299	173,388	178,798	185,156
Sugar Cane	153,864	144,763	140,883	142,261	155,542
Potatoes ...	146,681	143,511	125,685	137,070	151,515
Barley ...	106,436	131,099	140,243	143,013	108,424
Vineyards ...	62,546	61,232	59,450	58,151	59,114
All other Crops ...	144,898	126,390	122,897	129,626	136,762
Total	9,552,800	9,353,902	9,891,243	10,972,299	11,893,83

During the period under review the area devoted to the several crops has varied considerably, that under wheat attaining a maximum for the period in the season 1910-11, and a minimum in 1908-9, while hay reached its maximum area in 1908-9 and its minimum in 1906-7. Of the other crops maize, orchards and fruit gardens, sugar-cane and potatoes attained their maximum areas in 1910-11, oats and barley in 1909-10, green forage in 1907-8, and vineyards in 1906-7.

#### § 4. Wheat.

1. **Progress of Wheat-Growing.**—(i.) *Acres.* The area under wheat for grain is given below for each State at various periods since 1860, and is shewn diagrammatically in the graph hereinafter :—

AREA UNDER WHEAT, 1860-1 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	128,829	161,252	196	273,672	13,584	66,450	643,983
1865-6	131,653	178,628	2,068	410,608	22,249	73,270	818,476
1870-1	147,997	284,167	2,892	604,761	26,640	57,382	1,123,839
1875-6	133,609	321,401	4,478	898,820	21,561	42,745	1,422,614
1880-1	253,138	977,285	12,632	1,733,542	27,686	50,022	3,054,305
1885-6	264,867	1,020,082	10,093	1,922,555	29,511	30,266	3,277,374
1890-1	333,233	1,145,163	10,390	1,673,573	33,820	32,452	3,228,631
1895-6	596,684	1,412,736	27,090	1,649,929	23,241	64,652	3,774,332
1900-1	1,530,609	2,017,321	79,304	1,913,247	74,308	51,825	5,666,614
1901-2	1,392,070	1,754,417	87,232	1,743,452	94,710	44,084	5,115,965
1902-3	1,279,760	1,994,271	1,880	1,746,842	92,393	40,898	5,156,049
1903-4	1,561,111	1,968,599	138,096	1,711,174	137,946	49,414	5,566,340
1904-5	1,775,955	2,277,537	150,958	1,840,157	182,080	43,091	6,269,778
1905-6	1,939,447	2,070,517	119,356	1,757,036	195,071	41,319	6,122,746
1906-7	1,866,253	2,031,893	114,575	1,686,374	250,283	32,808	5,982,186
1907-8	1,390,171	1,847,121	82,461	1,753,755	279,609	30,794	5,383,911
1908-9	1,394,056	1,779,905	80,898	1,693,501	285,011	29,102	5,262,473
1909-10	1,990,180	2,097,162	117,160	1,895,738	448,918	37,078	6,586,236
1910-11	2,128,826	2,398,089	106,718	*2,104,719	581,862	52,242	7,372,456

\* Including Northern Territory, 2 acres.

The area devoted in the Commonwealth to the production of wheat for grain was higher for the season 1910-11 than for any previous season, exceeding the area for 1909-10, the previous record season, by 786,220 acres, and that for 1908-9 by no less than 2,109,983 acres. The maximum area under wheat for grain was attained by the several States in the following seasons :—New South Wales, Victoria, South Australia and Western Australia 1910-11 ; Queensland 1904-5 ; and Tasmania, 1897-8. The average area under wheat in the Commonwealth in the past ten seasons was 5,881,814 acres. The seasons 1904-5, 1905-6, 1906-7, 1909-10 and 1910-11 exceeded this average, while the remaining five seasons fell short of it. According to the preliminary reports available it appears that the area of wheat reaped for grain in 1911-12 will fall short of that for 1910-11, and will probably not exceed 7,200,000 acres.

(ii.) *Yield.* The production during the same period for each State and for the Commonwealth as a whole is given below :—

## PRODUCTION OF WHEAT, 1860-1 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1	1,581,598	3,459,914	3,136	3,576,593	208,332	1,415,896	10,245,469
1865-6	1,013,863	3,514,227	33,088	3,587,800	231,594	1,273,766	9,654,338
1870-1	999,595	2,870,409	39,787	6,961,164	316,769	896,881	12,084,605
1875-6	1,958,640	4,978,914	97,400	10,739,834	237,171	700,092	18,712,051
1880-1	3,717,355	9,727,369	223,243	8,606,510	332,232	750,040	23,356,749
1885-6	2,733,133	9,170,538	51,598	14,612,876	339,376	524,348	27,431,869
1890-1	3,649,216	12,751,295	207,990	9,399,389	467,389	642,980	27,118,259
1895-6	5,195,312	5,669,174	123,630	5,929,300	188,077	1,164,855	18,270,348
1900-1	16,173,771	17,847,321	1,194,088	11,253,148	774,653	1,110,421	48,353,402
1901-2	14,808,705	12,127,382	1,692,222	8,012,762	956,886	963,662	38,561,619
1902-3	1,585,097	2,569,364	6,165	6,354,912	985,559	876,971	12,378,068
1903-4	27,334,141	28,525,579	2,436,799	13,209,465	1,876,252	767,398	74,149,634
1904-5	16,464,415	21,092,139	2,149,663	12,023,172	2,013,237	792,956	54,535,582
1905-6	20,737,200	23,417,670	1,137,321	20,143,798	2,308,305	776,478	68,520,772
1906-7	21,817,938	22,618,043	1,108,902	17,466,501	2,758,567	651,408	66,421,359
1907-8	9,155,884	12,100,780	693,527	19,135,557	2,925,690	644,235	44,655,673
1908-9	15,483,276	23,345,649	1,202,799	19,397,672	2,460,823	700,777	62,590,996
1909-10	28,532,029	28,780,100	1,571,589	25,133,851	5,602,368	793,660	90,413,597
1910-11	27,913,547	34,813,019	1,022,373	*24,344,760	5,897,540	1,120,744	95,111,983

\* Including Northern Territory, 20 bushels.

The wheat harvest of 1910-11 was the largest ever reaped in the Commonwealth, and exceeded by no less than 4,698,386 bushels that of 1909-10, the next largest harvest, these being the only two occasions on which a yield exceeding 75,000,000 bushels has been obtained. The only other occasions on which a yield exceeding 60,000,000 bushels has been reaped were the seasons 1903-4, 1905-6, 1906-7 and 1908-9. The prospects for the forthcoming harvest of 1911-12, although not so good as for the two preceding seasons, are still fair, and it appears probable that the aggregate yield for the season will exceed 75,000,000 bushels. For latest particulars to date of going to press, see Appendix.

(iii.) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the last ten seasons and for the decennium :—

## YIELD OF WHEAT PER ACRE, 1901-2 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	10.64	6.91	19.40	4.60	10.10	21.86	7.54
1902-3	1.24	1.29	3.28	3.64	10.67	21.44	2.40
1903-4	17.51	14.49	17.65	7.72	13.60	15.53	13.32
1904-5	9.27	9.26	14.24	6.53	11.06	18.40	8.70
1905-6	10.69	11.31	9.53	11.46	11.83	18.79	11.19
1906-7	11.69	11.13	9.68	10.36	11.02	19.86	11.10
1907-8	6.59	6.55	8.41	10.91	10.46	20.92	8.29
1908-9	11.11	13.12	14.87	11.45	8.63	24.08	11.89
1909-10	14.34	13.72	13.41	13.26	12.48	21.41	13.73
1910-11	13.11	14.52	9.58	11.57	10.14	21.45	12.90
Average for 10 seasons	11.00	10.36	13.03	9.21	10.91	20.18	10.33

As the above figures shew, there were remarkable variations in the average yields, chiefly due of course to the vagaries of the season. The season 1902-3 was an especially lean one in all the States except Western Australia and Tasmania. A large proportion of the area sown with wheat had to be ploughed in or else fed off by stock, but the comparatively heavy yields in the succeeding year shew that this additional cultivation

was very beneficial. For the Commonwealth as a whole the average yield per acre for 1910-11 was below that for 1909-10 which was the best since 1866-7, when, however, the area under wheat was only about one-eighth of the area so cropped in 1910-11. Victoria was the only State with an increase in the average yield per acre, Tasmania was approximately the same as in the previous year, the falling-off being in the other four States.

(iv.) *Relation to Population.* During the past ten seasons the Commonwealth's production of wheat per head of population has varied between  $3\frac{1}{2}$  bushels in 1902-3 and  $21\frac{1}{2}$  bushels in 1910-11. The State in which wheat-growing occupies the most important position relatively to population is South Australia, which in 1910-11 had a yield which averaged close upon 60 bushels per head. Queensland is the State in which the average production of wheat per head is least. Particulars for the past ten seasons are as follows:—

#### AUSTRALIAN WHEAT PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	10,766	10,023	3,340	22,299	4,943	5,499	10,082
1902-3	1,131	2,127	12	17,801	4,649	4,887	3,194
1903-4	19,179	23,678	4,707	36,998	8,348	4,195	18,932
1904-5	11,312	17,495	4,095	33,456	8,409	4,282	13,723
1905-6	13,937	19,347	2,140	55,551	9,228	4,166	16,747
1906-7	14,664	18,542	2,057	47,656	10,811	3,512	16,234
1907-8	6,017	9,816	1,271	51,211	11,494	3,398	10,730
1908-9	9,915	18,670	2,159	50,275	9,477	3,655	14,789
1909-10	17,679	22,537	2,720	63,971	21,087	4,110	20,910
1910-11	16,981	26,750	1,707	59,835	21,304	5,783	21,494

\* Exclusive of Northern Territory.

2. *Australian and Foreign Wheat Yields.*—In the next table will be found a statement of the average return per acre in the principal wheat-growing countries of the world ranging from Belgium with a maximum of  $39\frac{1}{2}$  bushels per acre to Algeria with a minimum of  $8\frac{1}{2}$  bushels per acre. Australia with approximately 13 occupies an intermediate position:—

#### AVERAGE YIELD OF WHEAT IN VARIOUS COUNTRIES.

Country.	Year.	Average Yield in bushels per acre.	Country.	Year.	Average Yield in bushels per acre.
Belgium...	1909	39.22	United States...	1909	15.30
Denmark	1909	36.90	Hungary	1909	14.36
United Kingdom	1909	33.85	Servia	1906	14.34
Netherlands	1909	31.82	Rumania	1909	13.18
Germany	1909	30.50	<b>Australia</b>	<b>1910</b>	<b>12.90</b>
Sweden	1909	29.29	Bulgaria	1909	12.48
New Zealand	1910	25.73	Russia in Europe	1909	12.46
Canada*	1909	21.51	Caucasia	1909	12.31
France	1909	21.19	Uruguay	1908	12.15
Japan	1909	20.13	India	1909	10.88
Austria	1909	19.27	Argentine Republic	1909	10.72
Italy	1909	16.33	Siberia	1909	8.51
Spain	1909	15.42	Algeria	1908	8.27

\* Exclusive of British Columbia.

3. *Wheat Crops of the World.*—The latest available official statistics of the production of wheat in various countries are given in the following table:—

## WHEAT YIELDS OF VARIOUS COUNTRIES.

Country.	Year.	Yield in Bushels.	Country.	Year.	Yield in Bushels.
United States	1909	714,778,456	Austria	1909	56,990,960
Russia in Europe	1909	606,114,176	Rumania	1909	54,996,920
India	1910	356,794,664	Bulgaria	1909	32,063,352
France	1909	345,185,224	Algeria	1908	29,731,384
Italy	1909	189,907,656	Japan	1909	22,294,832
Canada*	1909	166,744,000	Belgium	1909	15,501,464
Argentine Republic	1909	156,119,824	Servia	1906	13,207,225
Spain	1909	144,064,400	Mexico	1905	9,390,670
Germany	1909	137,961,104	New Zealand	1910	8,290,221
Hungary	1909	125,871,880	Uruguay	1908	7,427,774
Caucasia (Russia)	1909	103,251,696	Sweden	1909	6,691,576
Australia	1910	95,111,983	Netherlands	1909	4,029,512
Siberia (Russia)	1909	71,473,976	Denmark	1909	3,685,784
United Kingdom	1909	63,196,696			

\*Exclusive of British Columbia.

Various estimates of the total quantity of wheat produced in the world have been made. That furnished by the United States Department of Agriculture gives the following figures for the five years 1905 to 1909 :—

## WORLD'S PRODUCTION OF WHEAT.

Year	1905.	1906.	1907.	1908.	1909.
Production	1,000,000 bushels. 3,225	1,000,000 bushels. 3,324	1,000,000 bushels. 3,031	1,000,000 bushels. 3,079	1,000,000 bushels. 3,513

In this estimate the figures given for Australia and New Zealand relate to the agricultural year ending on 31st March in the year specified.

For the five years referred to the Australian production of wheat aggregated 332,600,000 bushels, thus representing about 2 per cent. of the world's production. The total quantity of wheat produced in the British Empire during the same period of five years was approximately 2,800,000,000 bushels, so that the Australian production of wheat represented nearly 12 per cent. of that of the British Empire, while the British Empire production represented about 17 per cent. of the world's total.

4. **Prices of Wheat.**—(i.) *British Wheat.* Since the United Kingdom is the largest importer of Australian wheat, the price of wheat in the British markets is a matter of considerable interest to the local producer. The table below gives the average prices per Imperial quarter realised for British-grown wheat :—

## PRICES OF BRITISH WHEAT PER QUARTER, 1861 to 1910.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1861	55 4	61 6	50 0	1904	28 4	30 6	26 3
1871	56 8	60 0	52 6	1905	29 8	32 3	26 8
1881	45 4	55 2	40 9	1906	28 3	30 9	25 9
1891	37 0	41 8	32 3	1907	30 7	36 3	26 0
1901	26 9	27 8	25 8	1908	32 0	35 6	30 5
1902	28 1	31 8	24 10	1909	36 11	44 9	31 4
1903	26 9	30 3	24 11	1910	31 8	33 9	29 0

(ii.) *Australian and other Wheat.* Generally speaking, Australian wheat shews a grain of bright clear texture, rich in gluten, and of fine milling quality. Its excellence is attested by the high price which it realises in the Home markets. The statement below shews, for the last five years, the average value per Imperial quarter of the wheat imported into the United Kingdom from the chief producing countries:—

**AVERAGE PRICE OF FOREIGN WHEAT IMPORTED INTO THE UNITED KINGDOM,  
1906 to 1910.**

Country.	Average Price per Imperial Quarter.					Country.	Average Price per Imperial Quarter.				
	1906.	1907.	1908.	1909.	1910.		1906.	1907.	1908.	1909.	1910.
U. States—	s. d.	s. d.	s. d.	s. d.	s. d.	British India	s. d.	s. d.	s. d.	s. d.	s. d.
A. Coast ...	30 7	33 9	36 3	38 6	37 3	...	29 4	33 9	37 8	40 8	35 5
P. Coast ...	30 11	31 9	36 1	38 6	37 3	Argentina ...	29 10	31 6	35 6	39 9	34 11
Australia ...	31 2	33 8	37 7	41 5	37 2	Rumania ...	28 11	30 2	38 5	40 9	34 2
Germany ...	27 7	25 0	33 7	38 3	36 11	Chile ...	...	36 8	35 1	39 1	33 7
Canada ...	30 8	34 1	35 1	39 3	36 9	Bulgaria ...	27 5	25 9	35 10	...	32 11
Russia—											
Nthn. Ports	28 6	32 11	35 5	39 3	35 7						
Stn. Ports	29 10	32 8	38 3	39 3	35 7						

In the next table will be found a statement of the export values of Australian wheat during each of the last ten years:—

**EXPORT VALUES OF AUSTRALIAN WHEAT, 1901 to 1910.**

Year ...	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Price per bushel	2s. 9d.	3s. 1d.	3s. 1d.	3s. 2d.	3s. 5d.	3s. 3d.	3s. 4d.	4s. 1d.	4s. 2d.	4s. 2d.

The export values here shown are the average declared values for the successive years at the several ports of shipment in the Commonwealth.

**5. Imports and Exports of Wheat and Flour.**—(i.) *Quantities.* The table hereunder shews the imports, exports, and net exports of wheat and flour during each year of the period 1901-10. For the sake of convenience flour has been expressed at its equivalent in wheat, one ton of flour being taken as equal to 50 bushels of grain. As shewn in this table, the Commonwealth imports of wheat and flour during 1903 were equivalent to 12,607,940 bushels of wheat. This importation was necessitated by the failure of the crop in the preceding season. The principal sources of supply were the United States, which contributed 5,000,000 bushels of wheat and 56,000 tons of flour, the Argentine, which sent 3,000,000 bushels of wheat and 2000 tons of flour, and Canada, which sent 57,000 bushels of wheat in addition to 11,000 tons of flour. Wheat to the extent of 134,000 bushels was obtained from India, while Brazil furnished 122,000 bushels. In ordinary seasons the import of wheat and flour is negligible. During the past five years the export has ranged between 20,900,000 bushels in 1908 and 54,760,000 bushels in 1910, the net exports for that period averaging 37,830,000 bushels.

# IMPORTS AND EXPORTS OF WHEAT AND FLOUR, COMMONWEALTH, 1901 to 1910.

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bshls. <sup>1</sup>	Bushels.	Bushels.	Eq. Bshls. <sup>1</sup>	Bushels.	Bushels.
1901	22,992	302,550	325,542	20,260,058	4,840,700	25,100,758	24,775,216
1902	176,133	553,650	729,783	8,999,282	1,659,150	10,658,432	9,928,649
1903	9,114,490	3,493,450	12,607,940	1,530,143	402,500	1,932,643	10,675,297 <sup>2</sup>
1904	618	58,200	58,818	33,346,066	5,247,500	38,593,566	38,534,748
1905	258	55,550	55,808	24,648,182	7,715,850	32,364,032	32,308,224
1906	745	43,800	44,545	30,262,335	8,344,050	38,606,385	38,561,840
1907	2,010	18,700	20,710	28,784,130	8,171,900	36,956,030	36,935,320
1908	142	8,900	9,042	15,027,388	5,840,150	20,867,538	20,858,496
1909	128	4,000	4,128	31,549,498	6,498,450	38,047,948	38,043,820
1910	325	8,600	8,925	47,761,895	6,997,300	54,759,195	54,750,270

1. Equivalent in bushels of wheat. 2. — denotes net imports.

(ii.) *Destination of Exported Breadstuffs.* In the next two tables will be found the principal countries to which the Commonwealth exported wheat and flour during each year of the period 1906-10. The countries are as shown in the Australian Customs returns, but owing to the fact that wheat ships are frequently instructed to call for orders at various ports, the countries in which these ports are, cannot be properly considered as the ultimate destination of the whole of the wheat said to be exported to them.

## EXPORTS OF WHEAT FROM THE COMMONWEALTH, 1906 to 1910.

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for Five Years.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
U. Kingdom	20,138,149	21,487,355	11,538,962	26,030,722	36,998,625	116,193,813
Sth. African Union ...	4,163,228	4,156,705	2,475,283	3,234,603	3,001,145	17,030,964
Peru ...	1,244,112	1,204,897	253,865	627,417	1,270,360	4,600,651
Canary Is. ...	327,255	...	...	288,410	3,280,215	3,845,880
Chile ...	2,212,410	568,675	75,617	...	102,025	2,958,727
Belgium ...	42,442	57,448	40,810	120,237	1,174,210	1,435,147
Spain ...	864,367	...	...	310,957	...	1,175,324
India ...	437,317	31,573	485,078	101,135	...	1,055,103
France ...	27,803	19,103	19,542	24,803	918,815	1,010,066
Italy ...	208,528	7,773	...	483,783	54,140	754,224
Japan ...	40,710	313,419	57	61,448	231,320	646,954
China ...	10,487	599,222	...	42	...	609,751
Germany ...	59,960	33,278	...	40,403	290,905	424,546
Egypt ...	161,470	179,132	70,045	...	...	410,647
Philippine I. ...	833	...	...	178,153	...	178,986
Ceylon ...	164,358	4,835	510	308	820	170,831
New Zealand	548	36,340	31,622	72,130	8,410	149,050
New Caledonia ...	60,563	4,153	722	3,275	470	69,183
Other Countries ...	97,795	80,222	35,275	21,672	430,435	665,399
Total ...	30,262,335	28,784,130	15,027,388	81,549,498	47,761,895	153,385,246



The exports of flour during the same period and the principal countries of destination were as follows :—

### EXPORTS OF FLOUR FROM THE COMMONWEALTH, 1906 to 1910.

Country to which Exported.	1906.	1907.	1908.	1909.	1910.	Total for Five Years.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Sth. African Union	38,080	28,208	23,662	24,460	29,535	143,945
United Kingdom	26,796	7,181	13,545	33,128	23,223	103,873
Portuguese East Africa	11,139	22,678	17,689	16,496	22,517	90,519
Java ...	15,021	17,320	13,492	13,346	18,808	77,987
Straits Settlements	17,608	18,133	5,665	6,250	12,374	60,030
Philippine Islands	12,126	16,947	9,790	11,803	9,359	60,025
Hong Kong	20,455	25,332	481	1,511	1,742	49,521
New Zealand	1,032	6,427	14,464	5,439	3,148	30,510
New Caledonia	3,613	4,293	4,056	3,897	4,049	19,908
Mauritius	5,471	2,579	3,461	3,090	2,894	17,495
Ceylon	2,408	2,345	2,716	2,257	2,287	12,013
China	586	6,479	363	300	816	8,544
Japan	4,793	491	1	337	815	6,437
Fiji	1,168	1,362	...	1,810	1,760	6,100
Guam	496	...	...	...	...	496
Other Countries	6,089	3,663	7,418	5,845	6,619	29,634
Total	166,881	163,438	116,803	129,969	139,946	717,037

During the five years under review the export of wheat to the United Kingdom totalled 116,193,813 bushels or about 76 per cent. of the total export for the period. On the other hand, the export of flour to the United Kingdom aggregated only 103,873 tons or about 14½ per cent. of the total export. During the five years the heaviest exports of flour have been to South Africa, the United Kingdom, Portuguese East Africa, Java, the Straits Settlements, the Philippine Islands and Hong Kong.

(iii.) *Exports of Wheat and Flour.* From the foregoing returns it will be seen that the quantity of Australian wheat exported in the form of flour during the past five years represents, on the average, about 23 per cent. of the total wheat export of the Commonwealth. One cause of this, and probably the chief one, is the fact that Australian wheats are in considerable demand with the English millers for mixing purposes, while the Australian flour has not, up to the present, received that consideration from the English bakers which its admitted qualities undoubtedly merit. Steps which have recently been taken for bringing these qualities before the British public may possibly have the effect of increasing the proportion of wheat exported in the form of flour.

A point of some interest in connection with the export of wheat, and one which bears also on the proportions of wheat and flour exports just referred to, is that concerning the quantity of phosphoric acid which this export has the effect of removing from the Commonwealth, and the necessity which exists for the return to the soil of this substance in some form.

According to an estimate furnished by the chemist to the New South Wales Department of Agriculture (F. B. Guthrie, Esq., F.C.S., etc.), the proportions of milled product from a bushel (60 lbs.) of wheat are, approximately, 42 lbs. of flour, 9 lbs. of bran, and 9 lbs. of pollard, while the percentage of phosphoric acid contained in these products is as follows:—

Flour	...	...	0.32 per cent., or 0.13 lbs. per bushel.
Bran	...	...	3.00        "        0.27        "
Pollard	...	...	0.90        "        0.08        "

The total amount of phosphoric acid contained in a bushel of wheat is, therefore, 0.48 lbs., of which 0.13 lbs. is in the flour and 0.35 lbs. in the offal.

During the past ten years the net exports from the Commonwealth of wheat and its milled products have amounted to 232,851,144 bushels of wheat, 1,023,401 tons of flour, and 4,421,818 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 120,000,000 lbs. of phosphoric acid, the value of which as a fertiliser would be about £750,000.

6. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in the Commonwealth during the season 1910-11 is shewn below :—

#### VALUE OF THE WHEAT CROP,\* 1910-11.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.Ter'ty.	C'w'lt'h.
	£	£	£	£	£	£	£	£
Aggregate value	4,855,790	5,910,960	204,475	4,209,611	1,081,216	196,130	5	16,458,187
Value per acre	£2/5/8	£2/9/4	£1/18/4	£2/0/0	£1/17/2	£3/15/1	£2/10/0	£2/4/8

\* Exclusive of the value of straw.

### § 5. Oats.

1. **Progress of Cultivation.**—Oats comes next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for 62 per cent., oats represented less than 6 per cent. of the area under crop in the Commonwealth. The progress of cultivation of oats since 1860 is shewn in the table hereunder, and more fully in the graphs hereinafter:—

#### CULTIVATION OF OATS, 1860-1 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	6,535	86,337	7	2,273	507	30,303	125,962
1865-6	10,939	102,817	348	2,872	1,232	28,538	146,746
1870-1	10,683	149,309	122	6,188	2,095	30,946	199,343
1875-6	18,856	124,100	114	3,640	1,256	32,556	180,522
1880-1	17,923	134,089	116	4,355	1,319	19,853	177,655
1885-6	14,117	215,994	208	7,871	1,596	29,247	269,033
1890-1	14,102	221,048	411	12,475	1,934	20,740	270,710
1895-6	23,750	255,503	922	34,098	1,880	32,699	348,852
1900-1	29,383	362,689	385	27,988	4,790	45,073	470,308
1901-2	32,245	329,150	1,535	34,660	9,751	54,089	461,430
1902-3	42,992	433,489	78	50,296	10,334	55,058	592,247
1903-4	51,621	433,638	2,808	57,558	14,568	60,663	620,856
1904-5	40,471	344,019	643	50,630	13,864	43,690	493,317
1905-6	38,543	312,052	533	56,950	15,713	42,776	466,567
1906-7	56,431	380,493	1,236	57,000	28,363	58,320	581,843
1907-8	75,762	398,749	715	66,297	46,667	54,625	642,815
1908-9	59,881	419,869	1,797	78,494	59,461	56,654	676,156
1909-10	81,452	384,226	2,789	85,346	73,342	71,293	698,448
1910-11	77,991	392,681	2,537	77,674	61,918	63,887	676,688

2. **Total Yield.**—The total oat crop of the several States for the same period is furnished in the following table :—

## COMMONWEALTH OAT CROP, 1860-1 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1 ...	98,814	2,633,693	91	52,989	11,925	926,418	3,723,930
1865-6 ...	116,005	2,279,468	4,524	42,642	19,005	688,740	3,150,384
1870-1 ...	119,365	2,237,010	1,586	88,383	39,974	691,250	3,177,568
1875-6 ...	352,966	2,719,795	1,482	60,749	18,840	827,043	3,980,875
1880-1 ...	356,121	2,362,425	2,081	50,070	21,104	439,446	3,231,247
1885-6 ...	279,107	4,692,303	1,006	97,201	23,142	784,325	5,877,084
1890-1 ...	256,659	4,919,325	8,967	116,229	38,791	519,395	5,859,366
1895-6 ...	374,196	2,880,045	10,887	184,012	19,326	906,934	4,375,400
1900-1 ...	593,548	9,582,332	7,855	366,229	86,433	1,406,913	12,043,310
1901-2 ...	687,179	6,724,900	42,208	469,254	163,654	1,702,659	9,789,854
1902-3 ...	351,758	4,402,982	520	620,823	167,882	1,752,745	7,296,710
1903-4 ...	1,252,156	13,434,952	70,713	902,936	258,503	1,621,950	17,541,210
1904-5 ...	652,646	6,203,429	15,137	555,696	226,318	1,178,819	8,832,045
1905-6 ...	883,081	7,232,425	5,858	869,146	283,987	1,200,024	10,474,521
1906-7 ...	1,404,574	8,845,654	28,884	896,166	457,155	1,979,574	13,612,007
1907-8 ...	851,776	5,201,408	9,900	874,388	721,753	1,526,002	9,185,227
1908-9 ...	1,119,558	11,124,940	38,811	1,280,235	739,303	1,946,010	16,248,857
1909-10 ...	1,966,586	7,913,423	50,018	1,209,131	1,248,162	2,347,548	14,734,868
1910-11 ...	1,702,706	9,699,127	50,469	1,136,618	776,233	2,063,303	15,428,456

The principal oat-growing State of the Commonwealth is Victoria. During the past ten seasons it has produced about 65½ per cent. of the total quantity of oats grown in the Commonwealth; Tasmania, New South Wales, and South Australia come next in order of importance. In New South Wales, Western Australia and Tasmania, the highest production of oats for any season was that of 1909-10, while Victoria and Queensland experienced a maximum yield in 1903-4, and South Australia in 1908-9. For the Commonwealth as a whole the record yield was that of 17,541,210 bushels in the season 1903-4, while the yield of 15,428,456 bushels for 1910-11 ranks third.

**3. Average Yield.**—The average yield per acre of the oat crop of the Commonwealth varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield for the past ten seasons are given in the succeeding table:—

## AVERAGE YIELD OF OATS PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	21.31	20.43	27.50	13.54	16.78	31.48	21.22
1902-3 ...	8.18	10.16	6.67	12.34	16.25	31.83	12.32
1903-4 ...	24.26	30.98	25.18	15.69	17.74	26.74	28.25
1904-5 ...	16.13	18.03	23.54	10.98	16.32	26.98	17.90
1905-6 ...	22.91	23.18	10.99	15.26	18.07	28.05	22.45
1906-7 ...	24.89	23.25	23.37	15.72	16.12	33.94	23.39
1907-8 ...	11.24	13.04	13.85	13.19	15.47	27.94	14.29
1908-9 ...	18.70	26.50	21.60	16.31	12.43	34.35	24.03
1909-10 ...	24.14	20.60	17.93	14.17	17.02	32.93	21.10
1910-11 ...	21.83	24.70	19.89	14.63	12.54	32.30	22.80
Average for 10 Seasons ...	19.51	21.10	21.30	14.33	15.10	30.87	20.84

It will be seen that as in the case of the wheat crop, the smallest average yield per acre for the Commonwealth for the period was that experienced in the season 1902-3, while the largest was that of the succeeding season.

4. **Relation to Population.**—The State in which oat production occupies the most important position in relation to population is Tasmania, the yield for that State representing for 1910-11 about 10½ bushels per head, as compared with 3½ bushels per head for the Commonwealth as a whole. Particulars for the past ten seasons are furnished in the succeeding table :—

**OAT PRODUCTION PER 1000 OF POPULATION.**

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.*	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	500	5,558	83	1,306	845	9,734	2,559
1902-3	251	3,644	1	1,739	792	9,767	1,883
1903-4	879	11,152	137	2,529	1,150	8,867	4,479
1904-5	448	5,145	29	1,546	945	6,366	2,222
1905-6	594	5,975	11	2,397	1,135	6,438	2,597
1906-7	944	7,252	54	2,445	1,792	10,673	3,327
1907-8	560	4,219	18	2,340	2,836	8,049	2,207
1908-9	717	8,897	70	3,318	2,847	10,150	3,839
1909-10	1,219	6,197	87	3,077	4,698	12,156	3,408
1910-11	1,036	7,453	84	2,794	2,804	10,646	3,487

\* Exclusive of Northern Territory.

5. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of the Commonwealth for the season 1910-11 is as follows :—

**VALUE OF OAT CROP,\* 1910-11.**

State.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aus.	Tas.	C'wealth.
Aggregate value	£225,250	£1,000,223	£8,832	£113,662	£103,498	£257,913	£1,709,378
Value per acre ...	£2/17/9	£2/10/11	£3/9/8	£1/9/3	£1/13/5	£4/0/9	£2/10/6

\* Exclusive of the value of Straw.

6. **Imports and Exports.**—The production of oats in the Commonwealth has not yet reached such a stage as to admit of a regular export trade in this cereal; in fact in certain years the imports have exceeded the exports, notably in 1903, 1906, and 1908. The quantities and values of oats imported into and exported from the Commonwealth during the ten years 1901 to 1910 are given hereunder :—

**COMMONWEALTH IMPORT AND EXPORT OF OATS, 1901 to 1910.**

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	1,526,599	153,674	2,874,334	285,347	1,347,735	131,673
1902	1,037,596	157,981	1,427,620	181,450	390,024	23,469
1903	2,066,365	229,395	184,823	23,305	—1,881,542	—206,090
1904	185,652	15,921	1,713,578	115,659	1,527,926	99,738
1905	392,400	45,460	882,740	83,479	490,340	38,019
1906	215,330	27,445	154,063	18,559	—61,267	—8,886
1907	21,945	2,850	533,485	60,204	511,540	57,354
1908	1,401,870	206,283	67,058	10,594	—1,334,812	—195,689
1909	320,543	32,607	339,258	35,375	18,715	2,768
1910	19,510	2,232	129,490	14,893	109,980	12,661

\* — signifies net imports.

The principal countries from which the Commonwealth imports of oats have been obtained are the Dominion of New Zealand and the South African colonies, while the principal countries to which oats were exported during the period under review were the South African colonies in the earlier, and the United Kingdom, the Philippine Islands, and India in the later years.

7. **Oatmeal, etc.**—Importations of oatmeal, etc., into the Commonwealth take place principally from the United Kingdom, the United States, and Canada. The total importations of oatmeal, wheatmeal, and rolled oats during 1910 amounted to 797,735 lbs., and represented a value of £9,342.

8. **Comparison with other Countries.**—A comparison of the Australian production of oats with that of the leading oat-producing countries of the world, is furnished in the following table:—

#### PRODUCTION OF OATS IN VARIOUS COUNTRIES, 1909.

Country.	Quantity of Oats produced	Country.	Quantity of Oats produced	Country.	Quantity of Oats produced.
	Bushels.		Bushels.		Bushels
United States ...	976,729,464	U'd. Kingdom	178,736,968	Argentina ...	26,236,192
Russian Empire	936,869,360	Austria ...	144,225,912	Rumania ...	25,143,352
Germany ...	515,725,600	Hungary ...	80,907,120	Netherlands	18,762,392
Canada* ...	353,466,000	Sweden ...	67,329,624	<b>Australia ...</b>	<b>14,734,868</b>
France ...	320,947,272	Denmark ...	40,590,522	New Zealand	13,804,000

\* Exclusive of British Columbia.

9. **Comparison of Yields.**—The average yield per acre of oats in Australia is a somewhat low one compared with the results obtained in other countries, where the cultivation of this cereal is more extensively carried on. Arranging the countries contained in the foregoing table, with the exception of Denmark, for which particulars are not available, according to the magnitude of the average yield of oats for the year 1909, the results are as follows:—

#### YIELD OF OATS PER ACRE, 1909.

Country.	Average per Acre.	Country.	Average per Acre.	Country.	Average per Acre.
	Bushels.		Bushels.		Bushels.
Netherlands ...	53.67	New Zealand ...	36.62	Hungary ...	27.48
Germany ...	48.44	France ...	33.09	Argentina ...	24.05
United Kingdom...	44.49	Austria ...	31.54	<b>Australia...</b>	<b>21.10</b>
Canada* ...	38.00	United States ...	29.42	Rumania...	21.01
				Russian Empire...	20.25

\* Exclusive of British Columbia.

10. **Price of Oats.**—The average wholesale prices of oats in the markets of the several capitals for the year 1910 are given in the following table:—

#### AVERAGE WHOLESALE PRICE OF OATS PER BUSHEL.

Particulars.	Sydney.	Melbourne	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ...	2 5	2 1	3 4	1 10	2 7	2 0

## § 6. Maize.

1. **States Growing Maize.**—The only States in which maize is at all extensively grown for grain are those of New South Wales and Queensland, the area so cropped in these two States during the season 1910-11 being 394,079 acres, or nearly 95 per cent. of the total for the Commonwealth. Of the balance, Victoria contributed 20,151 acres, South Australia 619 acres, Western Australia 46 acres, and the Northern Territory 19 acres. The climate of Tasmania prevents the growing of maize for grain in that State. In South Australia prior to 1908 particulars concerning maize had not been specially asked for on the form used in the collection of agricultural statistics. In all the States maize is grown to a greater or less extent as green forage, particularly in connection with the dairying industry.

2. **Area under Maize.**—The area devoted to the growing of maize for grain in each State, from 1875 onwards, is given in the following table, and the actual fluctuations from year to year are shown more fully on the graph hereinafter.

The total area under maize in the Commonwealth exceeded 300,000 acres for the first time in the season 1890-1, and although it fluctuated somewhat during the succeeding seventeen years, it may be considered to have remained at about that figure. The greatest divergence during the period occurred in 1903-4, when a record total of 371,906 acres was harvested. From 1908-9 onwards, however, a continuous increase in the area devoted to maize has been in evidence, and the total of 414,914 acres for 1910-11 is the highest ever attained. The area cropped with maize in New South Wales, which had declined rapidly from a maximum of 226,834 acres in 1903-4 to 160,980 acres in 1907-8, shewed a marked improvement in 1908-9, when a total area of 180,812 acres was cropped, and a further improvement to 212,797 acres in 1909-10, which was well maintained in the succeeding season 1910-11. In Queensland the area appears to be on the increase, and that for 1910-11 was the highest ever attained in that State, while the area cropped in 1909-10 had only twice been previously exceeded, viz., in 1906-7 and 1903-4. The area under maize in New South Wales in 1910-11 represents only 6½ per cent. of that State's total area under crop, while in the case of Queensland the maize crop represents over 27 per cent. of the total.

## AREA UNDER MAIZE, STATES AND COMMONWEALTH, 1875-6 to 1910-11.

Season.	N.S.W.	Victoria.	Queensland.	South Aust.	West Aust.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1875-6	117,582	2,346	38,711	...	60	158,699
1880-1	127,196	1,769	44,109	...	32	173,106
1885-6	132,709	4,530	71,741	...	120	209,100
1890-1	191,152	10,357	99,400	...	81	300,990
1895-6	211,104	7,186	100,481	...	23	318,794
1900-1	206,051	9,389	127,974	...	91	343,505
1901-2	167,333	10,020	116,983	...	513	294,849
1902-3	202,437	10,906	89,923	...	109	303,375
1903-4	226,834	11,810	133,099	...	163	371,906
1904-5	193,614	11,394	119,171	...	86	324,265
1905-6	189,353	11,785	113,720	...	43	314,901
1906-7	174,115	11,559	139,806	...	101	325,581
1907-8	160,980	10,844	127,119	*549	87	299,579
1908-9	180,812	14,004	127,655	1,223	181	323,875
1909-10	212,797	19,112	132,313	210	153	364,585
1910-11	213,217	20,151	180,862	†638	40	414,914

\* Particulars for previous years not available. † Including 19 acres, Northern Territory.

3. **Total Yield.**—In the matter of maize yield the season 1910-11 was a record one, the total production of that cereal for the Commonwealth exceeding 13,000,000 bushels. On only three previous occasions has a total of more than 10,000,000 bushels been reached, viz., in 1897-8, 10,036,083 bushels; in 1906-7, 10,172,254 bushels; and in 1909-10, 10,770,648 bushels. Particulars concerning the yield from 1875 onwards are as hereunder:—

**MAIZE CROP, STATES AND COMMONWEALTH, 1875-6 to 1910-11.**

Season.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1875-6 ...	3,410,517	37,177	1,006,486	...	1,200	4,455,380
1880-1 ...	4,518,897	49,299	1,409,607	...	896	5,978,699
1885-6 ...	4,336,163	181,240	1,574,294	...	1,417	6,093,114
1890-1 ...	5,713,205	574,083	2,373,803	...	1,526	8,662,617
1895-6 ...	5,687,030	351,891	2,391,378	...	600	8,430,899
1900-1 ...	6,292,745	604,180	2,456,647	...	1,399	9,354,971
1901-2 ...	3,844,993	615,472	2,569,118	...	5,203	7,034,786
1902-3 ...	3,049,269	750,524	1,033,329	...	2,110	4,835,232
1903-4 ...	6,836,740	904,239	1,923,623	...	2,487	9,667,089
1904-5 ...	4,951,132	623,736	2,542,766	...	896	8,118,530
1905-6 ...	5,539,750	641,216	2,164,674	...	428	8,346,068
1906-7 ...	5,763,000	704,961	3,703,374	...	919	10,172,254
1907-8 ...	4,527,852	508,761	3,093,789	*6,263	1,080	8,137,745
1908-9 ...	5,216,038	650,462	2,767,600	19,043	2,136	8,655,279
1909-10 ...	7,093,255	1,158,031	2,508,761	3,361	2,240	10,770,648
1910-11 ...	7,594,130	982,103	4,460,306	16,824	718	13,044,081

\* Particulars for previous years not available. † Including 449 bushels, Northern Territory.

4. **Average Yield.**—In the following table particulars are given of the average yield per acre of the maize crops of the several States for the ten seasons, 1901-2 to 1910-11:—

**AVERAGE YIELD OF MAIZE PER ACRE, COMMONWEALTH AND STATES,  
1901-2 to 1910-11.**

Season.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	22.98	61.42	21.96	...	10.16	23.86
1902-3 ...	15.06	68.82	11.49	...	19.36	15.94
1903-4 ...	30.14	76.57	14.45	...	15.26	25.99
1904-5 ...	25.57	54.74	21.34	...	10.42	25.04
1905-6 ...	29.26	54.41	19.04	...	9.95	26.50
1906-7 ...	33.10	60.99	26.51	...	9.10	31.24
1907-8 ...	28.13	46.92	24.34	*11.41	12.41	27.16
1908-9 ...	28.85	46.45	21.68	15.57	11.80	26.72
1909-10 ...	33.36	60.59	18.96	16.00	14.64	29.54
1910-11 ...	35.62	48.74	24.66	10.70	15.61	31.44
Average for 10 Seasons	28.32	57.30	20.90	†13.55	12.29	26.60

\* Particulars for previous years not available. † Average for 4 Seasons.

The extraordinarily high average yield obtained in Victoria is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts that are peculiarly suited to the production of this grain. The yield in New South Wales is appreciably higher than that obtained in Queensland.

5. **Value of Maize Crop.**—The value of the Commonwealth maize crop for the season 1910-11 has been estimated at £1,805,548, made up as follows:—

**VALUE OF MAIZE CROP, 1910-11.**

State.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N. Ter'ty.	C'wealth.
Aggregate value	£1,012,550	£122,763	£669,046	£956	£153	£80	£1,805,548
Value per acre	£4/15/0	£6/1/10	£3/14/0	£1/10/11	£3/6/6	£4/4/3	£4/7/0

6. **Relation to Population.**—During the past ten seasons the Commonwealth production of maize has ranged between  $1\frac{1}{4}$  bushels per head of population in 1902-3 and 3 bushels per head in 1910-11. The production in Queensland, the State in which the maize yield per head of population is highest, ranged during the same period between 2 bushels per head in 1902-3 and  $7\frac{1}{2}$  bushels per head in 1910-11. Details for the several States for the ten seasons are as follows:—

**MAIZE PRODUCTION PER 1000 OF POPULATION, 1901-2 to 1910-11.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.*	W. Aust.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ... ..	2,795	509	5,070	...	27	1,839
1902-3 ... ..	2,175	621	2,017	...	10	1,248
1903-4 ... ..	4,797	751	3,716	...	11	2,468
1904-5 ... ..	3,402	517	4,844	...	4	2,053
1905-6 ... ..	3,723	530	4,073	...	2	2,069
1906-7 ... ..	3,873	578	6,871	...	4	2,486
1907-8 ... ..	2,976	413	5,668	†17	4	1,955
1908-9 ... ..	3,340	520	4,968	49	8	2,045
1909-10 ... ..	4,398	907	4,342	9	8	2,491
1910-11 ... ..	4,620	755	7,446	16	3	2,948

\* Exclusive of Northern Territory.

† Particulars for previous years not available.

7. **Oversea Imports and Exports.**—Except in the years 1902 and 1903, when, owing to the severe drought experienced in Australia, many of the maize crops failed, the Commonwealth oversea trade in maize has been practically insignificant. In the former of the years mentioned nearly two million, and in the latter considerably more than a million bushels were imported. In 1908 and 1909 also, owing to the small harvests of seasons 1907-8 and 1908-9, the imports of maize were largely in excess of the exports. Details of imports and exports for the past ten years are as follows:—

**COMMONWEALTH IMPORTS AND EXPORTS OF MAIZE, 1901 to 1910.**

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ... ..	188,423	24,764	533	75	187,890	24,689
1902 ... ..	1,910,587	319,859	1,450	351	1,909,137	319,508
1903 ... ..	1,346,702	204,484	17,296	2,749	1,329,406	201,735
1904 ... ..	35,096	3,018	48,109	5,421	13,013	2,403
1905 ... ..	9,785	1,922	7,033	985	2,752	937
1906 ... ..	24,727	3,243	63,168	9,256	38,441	6,013
1907 ... ..	31,327	5,541	43,429	6,220	12,102	679
1908 ... ..	271,723	49,291	2,018	444	269,705	48,847
1909 ... ..	628,063	104,367	5,054	999	623,009	103,368
1910 ... ..	183,730	19,554	12,557	1,904	121,173	17,650

\* — signifies net imports.



The principal countries to which maize has been exported from the Commonwealth are South Africa, New Zealand, and China, while the principal countries from which importations have taken place are the Argentine Republic, New Zealand, the United States, the Pacific Islands, South Africa, and Java.

8. **Prepared Maize.**—A fairly large quantity of corn-flour is imported annually into the Commonwealth, the principal countries of supply being the United Kingdom and the United States. During the year 1910 these importations amounted to 466,010 lbs., and represented a value of £6997.

9. **Maize-growing in other Countries.**—The world's production of maize for the year 1909 has been estimated by the United States Department of Agriculture at 3,672,600,000 bushels, and of this quantity the United States of America was responsible for 2,687,500,000 bushels, or about 75 per cent. The other leading maize-producing countries of the world are Austria-Hungary, Argentine Republic, Italy, Rumania, Mexico, and Russia, in the order mentioned.

10. **Price of Maize.**—The average wholesale price of maize in the Sydney market is given in the following table for each of the years 1901 to 1910:—

**AVERAGE PRICE OF MAIZE PER BUSHEL, 1901 to 1910.**

Year	...	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Average price per bushel...		s. d. 2 9	s. d. 4 10	s. d. 4 1	s. d. 2 4	s. d. 3 3	s. d. 3 0	s. d. 3 2	s. d. 4 7	s. d. 4 2	s. d. 2 11

## § 7. Barley.

1. **Area under Barley.**—The area devoted to barley in the Commonwealth is one which has fluctuated very considerably, but the net result of these fluctuations has left it in practically the same position as that which it occupied thirty years ago. The principal barley-growing State is Victoria, which, for the season 1910-11, accounted for 48½ per cent. of the Commonwealth area devoted to this crop. The figures here given relate to the areas harvested for grain; only small areas are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this sub-section. The area under barley for grain in the several States from 1875 onwards is shewn in the following table:—

**COMMONWEALTH AREA UNDER BARLEY, 1875-6 to 1910-1911.**

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres
1875-6	4,817	31,568	613	13,969	5,014	5,939	61,920
1880-1	8,056	68,630	1,499	13,074	6,363	8,297	105,919
1885-6	5,293	74,112	406	16,493	6,178	6,833	109,320
1890-1	4,937	87,751	584	14,472	5,322	4,376	117,442
1895-6	7,590	78,438	721	14,184	1,932	6,178	109,043
1900-1	9,435	58,853	7,533	15,352	2,536	4,502	98,211
1901-2	6,023	32,423	11,775	15,517	2,669	6,104	74,511
1902-3	4,557	37,716	480	21,493	3,783	8,281	76,260
1903-4	10,057	47,760	22,881	28,697	3,609	8,084	121,088
1904-5	14,930	46,089	17,387	23,904	3,251	7,646	113,207
1905-6	9,519	40,938	5,201	26,250	3,665	5,372	90,945
1906-7	7,979	52,816	8,601	28,122	3,590	5,328	106,436
1907-8	11,890	63,074	6,943	37,321	6,019	5,852	131,099
1908-9	9,517	64,648	7,385	44,911	7,308	6,474	140,243
1909-10	15,091	58,603	13,109	41,895	8,022	6,293	143,013
1910-11	7,082	52,687	5,578	34,473	3,369	5,235	108,424

2. **Malting and other Barley.**—In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for the Commonwealth are as follows:—

**AREA UNDER MALTING AND OTHER BARLEY, 1910-11.**

State.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres	Acres.	Acres.	Acres.	Acres.	Acres
Malting barley	4,981	30,609	3,222	23,245	1,449	3,902	67,408
Other barley ...	2,101	22,078	2,356	11,228	1,920	1,333	41,016
Total ...	7,082	52,687	5,578	34,473	3,369	5,235	108,424

It will be seen that, taking the Commonwealth as a whole, about 62 per cent. of the area devoted to this grain in 1910-11 was cropped with malting barley. The proportion varies considerably in the several States.

3. **Total Yield.**—The total production of barley in the Commonwealth for the season 1910-11 amounted to 2,226,368 bushels, falling short of the record yield of 1908-9, by 647,836 bushels. Particulars concerning the yields of the several States from 1875 onwards are as follows:—

**COMMONWEALTH BARLEY CROP, 1875-6 to 1910-11.**

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1875-6	98,576	700,665	12,260	197,315	70,196	165,357	1,244,369
1880-1	163,395	1,068,830	31,433	151,886	89,082	169,156	1,673,782
1885-6	85,606	1,302,854	9,826	218,334	89,581	176,466	1,882,667
1890-1	81,383	1,571,599	12,673	175,583	85,451	99,842	2,026,531
1895-6	96,119	715,592	7,756	140,391	18,691	138,833	1,117,382
1900-1	114,228	1,215,478	127,144	211,102	29,189	116,911	1,814,052
1901-2	103,361	693,851	277,037	243,362	34,723	167,485	1,519,819
1902-3	18,233	561,144	3,595	317,155	46,255	201,133	1,147,515
1903-4	174,147	1,262,923	510,557	487,920	53,227	212,459	2,701,233
1904-5	266,781	874,099	331,772	346,718	37,332	163,194	2,019,896
1905-6	111,266	1,062,139	61,816	505,916	49,497	106,042	1,896,676
1906-7	152,739	1,255,442	158,283	491,246	48,827	141,895	2,248,432
1907-8	75,148	1,059,295	64,881	566,937	76,205	149,186	1,991,652
1908-9	166,538	1,511,181	137,667	825,740	74,433	158,645	2,874,204
1909-10	272,663	1,023,384	193,586	691,421	101,673	153,654	2,436,384
1910-11	82,005	1,340,387	83,621	544,471	33,566	142,318	2,226,368

4. **Value of Barley Crop.**—The estimated value of the total barley crop of the Commonwealth for the season 1910-11 was £400,054. The extent to which the several States have contributed to this total is shewn in the following table:—

**VALUE OF BARLEY CROP.\***

State.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
Total value ...	£15,190	£252,521	£18,580	£86,942	£5,473	£21,348	£400,054
Value per acre	£2/2/11	£4/15/10	£3/6/8	£2/10/5	£1/12/6	£4/1/7	£3/13/10

\* Exclusive of the value of Straw.

5. **Relation to Population.**—During the ten seasons 1901-2 to 1910-11, the quantity of barley produced in the Commonwealth has averaged about half a bushel per head of population. For the season 1910-11 the production ranged from about  $1\frac{1}{2}$  bushels per head in South Australia to one-twentieth of a bushel in New South Wales. Details for the period are as follows:—

**BARLEY PRODUCTION PER 1000 OF POPULATION, 1901-2 to 1910-11.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.*	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ... ..	75	573	547	677	179	956	397
1902-3 ... ..	13	464	7	888	218	1,121	296
1903-4 ... ..	122	1,048	986	1,367	237	1,161	690
1904-5 ... ..	183	725	632	965	156	881	508
1905-6 ... ..	75	877	116	1,395	198	570	470
1906-7 ... ..	103	1,029	294	1,340	191	765	550
1907-8 ... ..	49	859	119	1,517	299	787	479
1908-9 ... ..	107	1,209	247	2,140	287	827	679
1909-10 ... ..	169	801	335	1,760	383	796	563
1910-11 ... ..	50	1,002	140	1,338	121	734	503

\* Exclusive of Northern Territory.

6. **Commonwealth Imports and Exports.**—The Commonwealth oversea trade in barley is not extensive, and in most years the imports exceed the exports. In 1902 and 1903 somewhat extensive importations of barley from the United States and New Zealand took place, owing to the shortage in local supply resulting from the severe drought of that period. In 1904, the excellent crop of the season 1903-4 furnished the material for a heavy exportation to Japan, the total exported thither during that year being 551,825 bushels. In 1909 also a fairly heavy export took place, mainly to the United Kingdom. Particulars of the Commonwealth oversea imports and exports of barley for the ten years 1901 to 1910 are contained in the following table:—

**COMMONWEALTH IMPORTS AND EXPORTS OF BARLEY, 1901 to 1910.**

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ... ..	55,508	7,208	17,474	1,942	— 38,034	— 5,266
1902 ... ..	686,478	123,194	8,267	1,465	—678,211	—121,729
1903 ... ..	731,494	136,997	14,286	5,561	—717,208	—131,436
1904 ... ..	246,908	39,012	568,640	65,950	321,732	26,938
1905 ... ..	124,850	19,672	244,456	28,618	119,606	8,946
1906 ... ..	210,586	34,468	3,150	562	—207,436	— 33,906
1907 ... ..	232,154	53,802	38,350	5,533	—193,804	— 48,269
1908 ... ..	452,462	107,126	1,148	290	—451,314	—106,836
1909 ... ..	51,332	12,356	188,946	23,774	137,614	16,418
1910 ... ..	34,684	8,498	39,146	5,155	4,462	— 3,343

\* — signifies net imports.

It will be seen that in only three years out of the ten dealt with have the Commonwealth exports of barley exceeded the imports, viz., in 1904, 1905, and 1909. During the ten years the total importations amounted to 2,826,456 bushels, valued at £542,333,

and the total exports to 1,123,863 bushels, valued at £143,850, giving a net importation of 1,702,593 bushels in quantity and £398,483 in value.

In addition to the above, which relates to the unprepared grain, there is a small importation into the Commonwealth of pearl and Scotch barley, mainly from the United Kingdom, Germany, China and Japan. The total imported during 1910 amounted to only 5465 lbs. in weight, with a value of £60.

A more considerable export trade in Australian pearl and Scotch barley is carried on, mainly with the United Kingdom and New Zealand, the total exports for 1909 reaching 1,155,346 lbs. valued at £3573, and for 1910, 119,837 lbs. valued at £510.

**7. Commonwealth Imports and Exports of Malt.**—The importations of malt into the Commonwealth are fairly extensive, the bulk of the supply being obtained from the United Kingdom, Austria-Hungary, and Germany, but principally from the United Kingdom. Details of imports and exports for the past ten years are given hereunder:—

#### COMMONWEALTH IMPORTS AND EXPORTS OF MALT, 1901 to 1910.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ...	516,135	140,615	...	...	516,135	140,615
1902 ...	293,637	91,410	...	...	293,637	91,410
1903 ...	175,212	54,532	198	76	175,014	54,456
1904 ...	189,500	57,571	787	313	188,713	57,258
1905 ...	170,712	53,247	41	14	170,671	53,233
1906 ...	172,433	55,714	539	85	171,894	55,629
1907 ...	153,415	48,262	1,087	371	152,328	47,891
1908 ...	210,860	67,219	528	199	210,332	67,020
1909 ...	110,563	35,239	470	174	110,093	35,065
1910 ...	108,168	34,696	258	66	107,910	34,630

**8. Comparison with other Countries.**—In comparison with the barley production of other countries of the world, that of Australia appears very small indeed. Particulars for some of the leading countries for the year 1909 are as follows, the Australian figures being added for the sake of comparison:—

#### PRODUCTION OF BARLEY IN VARIOUS COUNTRIES, 1909.

Country.	Production of Barley.	Country.	Production of Barley.
	Bushels.		Bushels.
Russian Empire ...	456,143,976	Canada* ...	55,398,000
United States ...	165,107,368	France ...	44,718,296
Germany ...	154,086,752	Rumania ...	19,338,520
Spain ...	78,293,904	Sweden ...	13,429,072
Austria ...	73,229,416	Netherlands ...	3,229,176
Hungary ...	71,760,328	Australia ...	2,436,384
United Kingdom ...	68,944,752	New Zealand ...	1,304,000

\* Exclusive of British Columbia.

**9. Average Yield.**—The average yield per acre of barley varies considerably in the different States, being as a rule highest in Tasmania and Victoria, and lowest in Western

Australia and New South Wales. Details for each State for the ten seasons 1901-2 to 1910-11 are given in the following table :—

**AVERAGE YIELD PER ACRE OF BARLEY, 1901-2 to 1910-11.**

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	17.16	21.40	23.53	15.68	13.01	27.44	20.40
1902-3 ...	4.00	14.88	8.36	14.76	12.23	24.29	15.05
1903-4 ...	17.32	25.50	22.31	17.00	14.75	26.28	21.94
1904-5 ...	17.87	18.97	19.08	14.50	11.48	21.34	17.84
1905-6 ...	11.69	25.95	11.89	19.27	13.51	19.74	20.86
1906-7 ...	19.14	23.77	18.40	17.47	13.60	26.63	21.12
1907-8 ...	6.32	16.79	9.34	15.19	12.66	25.49	15.19
1908-9 ...	17.50	23.38	18.64	18.39	10.19	24.50	20.49
1909-10 ...	18.07	17.46	14.77	16.50	12.67	24.42	17.04
1910-11 ...	11.58	25.44	14.99	15.79	9.96	27.19	20.53
Average for 10 Seasons ...	14.74	21.43	18.36	16.59	12.27	24.68	19.06

10. **Price of Barley.**—The average prices of barley in the Melbourne market during each of the years 1903 to 1910 are given in the following table :—

**AVERAGE PRICE OF BARLEY PER BUSHEL, 1903 to 1910.**

Particulars.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley ...	3 11	3 6	4 0	4 5	4 8	4 10	3 10	4 1
Cape barley ...	3 1	1 9	2 7	2 4	2 8	3 8	2 7	2 5

**§ 8. Other Grain and Pulse Crops.**

In addition to the grain crops already specified, the only grain and pulse crops at all extensively grown in the Commonwealth are beans, peas and rye. The total area under the two former for the season 1910-11 was 42,239 acres, giving a total yield of 931,867 bushels, or an average of 22.06 bushels per acre, being 2.39 over the average yield for the decennium ended 1910-11, which was 19.67 bushels per acre. The States in which the greatest area is devoted to beans and peas are Tasmania, Victoria and South Australia. The total area under rye in the Commonwealth during the season 1910-11 was 10,004 acres, yielding 128,091 bushels, and giving an average of 12.80, this being almost identical with the average for the past ten seasons, which is 12.75 bushels per acre. Nearly 45 per cent. of the rye grown during the season was produced in New South Wales, 25 per cent. in Victoria, and 18 per cent. in Tasmania. In addition to these grain crops a small area of rice was for some years cultivated in Queensland. The results obtained, however, have not offered sufficient inducement to growers to continue this crop, and the total area devoted to it declined from 1113 acres in 1892-3 to 7 acres in 1908-9 and disappeared from the records for 1909-10. Twelve acres were, however, under cultivation during 1910-11 in the Northern Territory, producing 784 bushels of rice. Should rice-growing ever be seriously taken up in Australia, it is probable that large tracts of country in the northern parts of Western Australia and in the Northern Territory will be found well suited to its cultivation.

### § 9. Potatoes.

1. **Area.**—The principal potato-growing State of the Commonwealth as regards area is Victoria, Tasmania usually ranking second and New South Wales third. For the season 1909-10, however, owing mainly to the prevalence of the Irish potato blight the Tasmanian area fell to 21,375 acres, a lower figure than has been recorded for any season since 1898-9. In consequence of this, the second place for 1909-10 was occupied by New South Wales, Tasmania being third. New South Wales maintained this position in 1910-11, having 44,452 acres under potatoes, and Tasmania 26,230. The area devoted to this crop in the Commonwealth, which has fluctuated somewhat, reached its highest point in the season 1910-11, with a total of 151,515 acres.

The area under potatoes in each State from 1890 onwards is given hereunder :—

#### COMMONWEALTH AREA UNDER POTATOES, 1890-1 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1	19,406	53,818	6,270	6,626	511	20,133	106,764
1895-6	24,722	43,895	9,240	6,448	668	19,247	104,220
1900-1	29,408	38,477	11,060	6,628	1,794	23,068	110,435
1901-2	26,158	40,058	9,948	6,248	1,829	25,444	109,685
1902-3	19,444	49,706	2,899	7,763	2,084	34,625	116,521
1903-4	20,851	48,930	6,732	8,616	1,823	29,160	116,112
1904-5	23,855	46,912	9,771	8,315	1,906	25,948	116,707
1905-6	26,374	44,670	7,170	9,540	2,145	28,634	118,533
1906-7	36,815	55,372	8,031	9,894	2,264	34,305	146,681
1907-8	31,917	54,149	7,889	9,062	1,854	38,640	143,511
1908-9	26,301	47,903	6,227	8,069	2,026	35,159	125,685
1909-10	35,725	62,390	7,708	8,131	1,741	21,375	137,070
1910-11	44,452	62,904	8,326	7,812	1,791	26,230	151,515

2. **Total Yield.**—For the season 1910-11, Victoria's production represented about 41 per cent. of the total for the Commonwealth, New South Wales and Tasmania coming next in order with 30½ and 17½ per cent. respectively. The total Commonwealth production for the season 1906-7, viz., 507,153 tons, was the highest ever attained, the yield which most nearly approached it being 449,333 tons in 1903-4. Details as to production in the several States during the period from 1890 onwards are as follows :—

#### COMMONWEALTH PRODUCTION OF POTATOES, 1890-1 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1890-1	52,791	204,155	13,112	23,963	1,900	73,158	369,079
1895-6	56,179	117,238	19,027	18,412	2,290	81,423	294,569
1900-1	63,253	123,126	20,014	14,566	4,836	93,862	319,657
1901-2	39,146	125,474	22,402	15,059	5,739	114,704	322,524
1902-3	30,732	168,759	3,257	28,312	6,488	163,518	401,066
1903-4	56,743	167,736	17,649	31,415	4,542	171,298	449,333
1904-5	48,754	92,872	19,231	19,521	5,614	110,547	296,539
1905-6	50,386	115,352	11,308	20,328	6,297	64,606	268,277
1906-7	114,856	166,839	15,830	22,277	5,028	182,323	507,153
1907-8	55,882	135,110	13,177	20,263	5,671	145,483	375,586
1908-9	71,794	152,840	11,550	21,553	6,695	121,605	386,037
1909-10	100,143	174,970	13,544	18,569	5,948	73,862	387,036
1910-11	121,033	163,312	15,632	23,920	5,864	70,090	399,851

3. **Average Yield per Acre.**—The suitability of the soil, climate, and general conditions of Tasmania for potato growing is evidenced by the high yields per acre which are almost invariably obtained in the island State, the average yield during the past ten seasons being over 4 tons per acre. The lowest average yield is that obtained in Queensland

with an average of just under two tons for the same period. Particulars for each State for the ten seasons 1901-2 to 1910-11 are given hereunder:—

**AVERAGE YIELD OF POTATOES, COMMONWEALTH AND STATES, 1901-2 to 1910-11.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	1.50	3.13	2.25	2.41	3.14	4.51	2.94
1902-3	1.58	3.40	1.12	3.65	3.11	4.72	3.44
1903-4	2.72	3.43	2.62	3.65	2.49	5.87	3.87
1904-5	2.04	1.98	1.97	2.35	2.95	4.26	2.54
1905-6	1.89	2.58	1.58	2.13	2.94	2.26	2.26
1906-7	3.12	3.01	1.97	2.25	2.22	5.31	3.46
1907-8	1.75	2.50	1.67	2.24	3.06	3.77	2.62
1908-9	2.73	3.19	1.85	2.67	3.30	3.46	3.07
1909-10	2.80	2.80	1.76	2.28	3.42	3.46	2.82
1910-11	2.72	2.60	1.88	3.06	3.27	2.67	2.64
Average for 10 Seasons	2.36	2.85	1.92	2.65	2.97	4.07	2.96

4. **Value of Potato Crop.**—The estimated value of the potato crop of each State for the season 1910-11 is furnished in the following table, together with the value per acre:—

**VALUE OF POTATO CROP, 1910-11.**

State.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Total value	£673,330	£596,089	£132,872	£114,816	£73,300	£350,450	£1,940,857
Value per acre	£15/2/11	£9/9/6	£15/19/2	£14/13/11	£40/18/6	£13/7/3	£12/16/2

5. **Relation to Population.**—The average production of potatoes per annum per head of the population of the Commonwealth for the past ten seasons has been approximately 210 lbs. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was nearly a ton, and in 1910-11 about 7½ cwt. Details for the past ten seasons are as follows:—

**POTATO PRODUCTION PER 1000 OF POPULATION.**

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	28	104	44	42	30	655	84
1902-3 ...	22	140	6	79	31	911	103
1903-4 ...	40	139	34	88	20	936	115
1904-5 ...	33	77	37	54	23	597	75
1905-6 ...	34	95	21	56	25	347	66
1906-7 ...	77	137	29	61	20	983	124
1907-8 ...	37	110	24	54	22	767	90
1908-9 ...	46	122	21	56	26	634	91
1909-10 ...	62	137	23	47	22	382	90
1910-11 ...	93	125	26	59	21	362	90

\* Exclusive of Northern Territory.

6. **Commonwealth Imports and Exports.**—Under normal conditions there is usually a fairly large export trade in potatoes carried on by the Commonwealth, principally with New Zealand, the Pacific Islands, and the Philippine Islands. Thus, during 1907, out of a total export of 17,842 tons, 13,346 tons went to New Zealand, 2102 tons to the Pacific

Islands, and 2112 tons to the Philippine Islands. On the other hand, when in 1902 and 1903 the drought of that period had brought about a shortage in the Australian supplies, importations from New Zealand took place to the extent of 11,471 tons in the former and 2279 tons in the latter year. The quantities and values of the Commonwealth overseas imports and exports of potatoes for the ten years 1901 to 1910 are contained in the following table:—

**COMMONWEALTH IMPORTS AND EXPORTS OF POTATOES, 1901 to 1910.**

Year.	Imports.		Exports.		Net Exports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1901 ...	17,655	86,067	6,028	45,485	— 11,627	— 40,582
1902 ...	11,608	53,919	3,383	20,192	— 8,225	— 33,727
1903 ...	2,367	7,752	3,407	12,336	1,040	4,584
1904 ...	2,602	8,186	5,464	14,462	2,862	6,276
1905 ...	428	3,181	4,058	29,730	3,630	26,549
1906 ...	295	2,205	12,908	86,248	12,613	84,043
1907 ...	150	981	17,842	53,452	17,692	52,471
1908 ...	129	1,112	3,375	18,560	3,246	17,448
1909 ...	138	1,202	2,604	16,370	2,466	15,168
1910 ...	1,665	1,313	7,089	42,395	5,424	41,082

\* — signifies net imports.

**7. Comparison with Other Countries.**—The following table will furnish means for comparing the potato crop of Australia for 1909 with those of some of the leading potato-producing countries of the world for the same year:—

**POTATO CROPS OF VARIOUS COUNTRIES, 1909.**

Country.	Yield.	Country.	Yield.
	Tons.		Tons.
Germany ...	45,955,616	Belgium (1908) ...	2,218,467
Russian Empire ...	31,835,241	Sweden ...	1,502,000
France (1908) ...	16,736,899	Denmark ...	585,000
Austria ...	12,843,356	Japan (1908) ...	567,351
United States ...	9,127,000	Norway ...	535,000
United Kingdom ...	6,877,272	<b>Australia ...</b>	<b>387,036</b>
Hungary (1908) ...	4,300,517	New Zealand ...	180,500
Canada * ...	2,477,000	Luxemburg ...	163,310
Netherlands ...	2,357,000		

\* Exclusive of British Columbia.

## § 10. Other Root and Tuber Crops.

**1. Nature and Extent.**—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1910-11 being only 20,829 acres. The principal of these crops are onions, mangolds, turnips, and "sweet potatoes" (*Batatas edulis*). Of these, onions are most largely grown in Victoria, mangolds in Tasmania and Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in the Commonwealth during the season 1910-11 was 6864 acres giving a total yield of 41,276 tons, and averaging 6.01 tons per acre. The area devoted in 1910-11 to root crops other than potatoes and onions, viz., 13,965 acres, yielded 153,667 tons, and gave an average of 11 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," a reference to which will be made later.



**2. Commonwealth Imports and Exports.**—The only root crop, other than potatoes, in which any considerable overseas trade is carried on by the Commonwealth is that of onions. During the year 1910 overseas imports of onions amounted to 97 tons, obtained principally from the Straits Settlements. For the same year the exports of onions totalled 3927 tons, the principal countries to which they were exported being New Zealand, Canada, the Philippine Islands, and the Pacific Islands.

## § 11. Hay.

**1. Nature and Extent.**—As already stated, the most important crop of the Commonwealth is that of wheat grown for grain. Next to this in importance is the hay crop, which for the season 1910-11 represented about 19 per cent. of the area under crop in the Commonwealth. In most European countries the hay crop consists almost entirely of meadow and other grasses, whilst in Australia a very large proportion of the area under hay comprises cereal crops, mainly wheat and oats. A considerable quantity of lucerne hay is also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States from 1860 onwards is given hereunder:—

AREA UNDER HAY, 1860-1 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	46,584	90,921	276	55,818	6,626	31,837	232,062
1865-6	61,909	97,902	1,449	101,996	8,824	30,244	302,324
1870-1	65,404	163,181	3,671	140,316	17,173	33,612	423,357
1875-6	77,125	155,274	8,531	161,429	17,319	34,758	454,436
1880-1	131,153	249,656	12,022	272,567	19,563	31,615	716,576
1885-6	219,886	421,036	28,881	312,672	19,677	41,693	1,043,845
1890-1	175,242	413,052	31,106	345,150	23,183	45,381	1,033,114
1895-6	319,296	464,482	28,609	362,972	68,804	54,748	1,293,911
1900-1	466,236	502,105	42,497	341,330	104,254	61,541	1,517,963
1901-2	442,163	659,239	63,055	369,796	92,654	61,495	1,688,402
1902-3	491,918	580,884	20,068	325,789	105,791	66,038	1,590,488
1903-4	496,017	733,353	78,393	370,152	109,002	66,947	1,853,864
1904-5	435,704	452,459	48,740	269,626	105,247	55,545	1,367,321
1905-6	438,036	591,771	37,425	317,924	124,906	64,350	1,574,412
1906-7	458,172	621,139	64,498	298,396	149,830	64,965	1,657,000
1907-8	542,761	682,194	54,037	328,672	131,056	73,859	1,812,579
1908-9	715,896	956,371	65,004	424,924	201,874	88,613	2,452,682
1909-10	630,491	864,359	72,298	424,448	158,629	77,804	2,228,029
1910-11	638,577	832,669	98,558	440,177	175,432	72,992	2,258,405

It will be seen from this table that in all the States marked fluctuations occur in the area devoted to the hay crop from year to year. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for the due development of the grain is not a satisfactory one. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in the Commonwealth for the season 1910-11 was, with the exception of that for 1908-9, the highest on record.

**2. Kinds of Hay.**—Particulars concerning the kind of crop cut for hay are furnished for a series of years in the returns prepared by four of the States. Totals only were

shown in the cases of South Australia and Tasmania until the season 1907-8, when a specification of details was obtained in South Australia also. Details for the past five seasons are given in the following table:—

### KINDS OF HAY GROWN, 1906-7 to 1910-11.

Kind of Hay Crop.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	Acres.	Acres.	Acres.	Acres.	Acres.
<b>NEW SOUTH WALES—</b>					
Wheaten ... ..	316,945	365,925	490,828	380,784	422,972
Oaten ... ..	94,420	132,325	169,441	178,968	142,805
Barley ... ..	843	937	1,566	1,917	2,241
Lucerne ... ..	45,964	43,574	54,061	68,822	70,559
<b>Total ... ..</b>	<b>458,172</b>	<b>542,761</b>	<b>715,896</b>	<b>630,491</b>	<b>638,577</b>
<b>VICTORIA—</b>					
Wheaten ... ..	231,408	210,927	278,005	186,400	240,026
Oaten ... ..	377,887	460,192	662,141	660,525	575,791
Other ... ..	11,844	11,075	16,225	17,434	16,852
<b>Total ... ..</b>	<b>621,139</b>	<b>682,194</b>	<b>956,371</b>	<b>864,359</b>	<b>832,669</b>
<b>QUEENSLAND—</b>					
Wheaten ... ..	8,664	2,084	4,075	9,031	19,894
Oaten ... ..	9,260	5,629	9,314	16,752	13,052
Lucerne ... ..	44,178	44,101	48,247	42,935	61,750
Other ... ..	2,396	2,223	3,368	3,580	3,862
<b>Total ... ..</b>	<b>64,498</b>	<b>54,037</b>	<b>65,004</b>	<b>72,298</b>	<b>98,558</b>
<b>SOUTH AUSTRALIA—</b>					
Wheaten ... ..	...	271,067	348,307	318,197	336,439
Oaten ... ..	...	48,151	68,659	96,496	96,062
Lucerne ... ..	...	3,767	3,162	2,537	2,055
Other ... ..	...	5,687	4,796	7,218	5,621
<b>Total ... ..</b>	<b>298,396*</b>	<b>328,672</b>	<b>424,924</b>	<b>424,448</b>	<b>440,177</b>
<b>WESTERN AUSTRALIA—</b>					
Wheaten ... ..	116,164	95,123	151,745	101,590	135,521
Oaten ... ..	32,521	33,854	48,309	55,006	38,637
Lucerne ... ..	1,145	2,079	124	254	233
Other ... ..	...	...	1,696	1,779	1,041
<b>Total ... ..</b>	<b>149,830</b>	<b>131,056</b>	<b>201,874</b>	<b>158,629</b>	<b>175,432</b>

\* Details not available.

It will be seen that wheat is the principal hay crop in New South Wales, South Australia, and Western Australia, oats in Victoria, and lucerne in Queensland. Details for Tasmania are not available.

3. **Total Yield.**—The Commonwealth hay crop for the season 1910-11 amounted to 3,175,851 tons, or 22,655 tons more than were produced in 1909-10. This represents the largest hay crop ever harvested in the Commonwealth, the highest previous records being that of 3,137,374 tons for the season 1908-9, and 3,153,196 for 1909-10. For many years past the State of Victoria has been the largest hay producer in the Commonwealth, and in the season 1910-11 accounted for more than 40 per cent. of the total production. The total yields of the several States from 1860 onwards are given hereunder:—

#### COMMONWEALTH HAY CROP, 1860-1 to 1910-11.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1860-1 ...	50,927	144,211	414	71,241	8,099	62,318	337,210
1865-6 ...	54,230	96,101	2,173	88,731	7,901	34,751	283,887
1870-1 ...	69,602	183,708	5,506	197,149	20,833	40,763	517,561
1875-6 ...	88,968	206,613	12,796	194,794	17,319	49,217	569,707
1880-1 ...	174,194	300,581	23,441	261,371	19,563	35,883	815,033
1885-6 ...	191,371	442,118	30,670	307,855	19,677	51,872	1,043,563
1890-1 ...	213,034	567,779	50,116	310,125	25,014	52,021	1,218,089
1895-6 ...	229,671	390,861	50,881	225,462	53,758	62,345	1,012,978
1900-1 ...	526,260	677,757	78,758	353,662	103,813	94,198	1,834,448
1901-2 ...	472,621	884,369	122,039	346,467	89,729	109,383	2,024,608
1902-3 ...	243,379	601,272	23,181	308,825	94,007	89,210	1,359,874
1903-4 ...	816,810	1,233,063	136,117	479,723	121,934	115,513	2,903,160
1904-5 ...	366,293	514,316	80,662	294,252	113,794	73,457	1,442,774
1905-6 ...	459,182	864,177	56,829	435,546	139,380	90,077	2,045,191
1906-7 ...	621,846	881,276	94,343	393,866	153,112	104,797	2,259,240
1907-8 ...	376,800	682,370	77,601	376,170	137,511	98,406	1,748,858
1908-9 ...	730,014	1,415,746	92,947	591,141	170,008	137,518	3,137,374
1909-10 ...	981,201	1,186,738	96,854	574,475	195,182	118,746	3,153,196
1910-11 ...	843,044	1,292,410	151,252	595,064	178,891	115,190	3,175,851

4. **Value of Hay Crop.**—The following table furnishes particulars concerning the total value and the value per acre of the hay crop of the several States of the Commonwealth for the season 1910-11:—

#### VALUE OF HAY CROP, 1910-11.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
Total value...	£2,514,020	£2,649,440	£431,856	£1,517,413	£987,038	£403,165	£8,502,932
Value per acre	£3/18/9	£3/3/8	£4/7/8	£3/8/11	£5/12/6	£5/10/6	£3/15/4

5. **Average Yield per Acre.**—The States of the Commonwealth in which the highest average yields per acre have been obtained are those of Queensland and Tasmania, these being also the States in which the smallest areas are devoted to this crop. For the past ten seasons the lowest yield for the Commonwealth as a whole was that of 17 cwt. per acre in 1902-3, and the highest that of 31 cwt. in 1903-4. The average per decennium was 25 cwt. Particulars for the several States for the seasons 1901-2 to 1910-11 are given hereunder:—

## AVERAGE YIELD OF HAY PER ACRE, 1901-2 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	1.07	1.34	1.94	0.94	0.97	1.78	1.20
1902-3 ...	0.49	1.04	1.16	0.95	0.89	1.35	0.86
1903-4 ...	1.65	1.68	1.74	1.30	1.12	1.73	1.57
1904-5 ...	0.84	1.14	1.65	1.09	1.08	1.32	1.06
1905-6 ...	1.05	1.46	1.52	1.37	1.12	1.40	1.30
1906-7 ...	1.36	1.42	1.46	1.34	1.06	1.61	1.36
1907-8 ...	0.69	1.00	1.44	1.14	1.04	1.33	0.96
1908-9 ...	1.02	1.48	1.43	1.39	0.84	1.55	1.28
1909-10 ...	1.56	1.37	1.34	1.35	1.23	1.53	1.42
1910-11 ...	1.32	1.55	1.53	1.35	1.02	1.58	1.41
Average for 10 seasons ...	1.12	1.37	1.55	1.23	1.03	1.52	1.26

6. **Relation to Population.**—During the past ten seasons the Commonwealth hay production per head of population has varied between 7 cwt. in 1902-3 and  $14\frac{1}{2}$  cwt. in 1903-4 and 1908-9; averaging about  $11\frac{1}{2}$  cwt. per head for the period. The State in which the hay production per head of population is highest is South Australia. Details for the past ten seasons are given hereunder:—

## HAY PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	339	731	241	964	463	624	529
1902-3 ...	174	498	45	865	443	497	351
1903-4 ...	573	1,024	263	1,344	543	631	741
1904-5 ...	252	427	154	819	475	397	363
1905-6 ...	309	714	107	1,201	557	483	507
1906-7 ...	418	722	175	1,088	620	565	552
1907-8 ...	248	554	142	1,007	540	519	420
1908-9 ...	467	1,132	167	1,532	655	717	741
1909-10 ...	608	929	168	1,462	735	615	729
1910-11 ...	513	993	253	1,463	648	594	718

\* Exclusive of Northern Territory.

7. **Oversea Imports and Exports.**—Under normal conditions hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of the Commonwealth. In 1901 and 1902, however, the exceptional demand which was created by the South African war brought about a fairly large export of hay and chaff to Natal and Cape Colony. These colonies also took a considerable quantity of Australian compressed fodder. During the year 1904, when the war between Japan and Russia was being carried on, the exports of compressed fodder to Hong Kong were valued at £42,759 and those to Japan at £23,608. The total value of the hay and chaff exported during 1901 was £406,455, as compared with £17,804 only in 1910, while the exports of fodder which amounted in value to £142,472 in 1904, had shrunk to £37,057 in 1910.

During 1910 the principal consignees of the hay and chaff exported from the Commonwealth were India, the Straits Settlements, New Zealand and Ceylon, while the principal countries to which compressed fodder was exported were the Philippine Islands and New Zealand.

Imports of hay and chaff into the Commonwealth are usually unimportant, and for the year 1910 totalled 111 tons, valued at £444, obtained principally from New Zealand.

**8. Hay Production in Other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy a prominent place. The statistics of hay production in these countries are not prepared on a uniform basis, and consequently any attempt to furnish an extensive comparison of the production of hay in the various countries would probably be misleading. It may be noted, however, that in the United Kingdom the production of hay from clover, sainfoin, etc., was for the year 1910 represented by 5,152,518 tons from 2,955,420 acres, while from permanent grasses a yield of 10,142,356 tons of hay was obtained from 6,545,190 acres, giving a total of 15,294,874 tons from 9,500,610 acres, or about 32 cwt. per acre.

## § 12. Green Forage.

**1. Nature and Extent.**—In all the States of the Commonwealth a considerable area is devoted to the production of green forage, mainly in connection with the dairying industry. The total area so cropped during the season 1910-11 was 374,862 acres, which was 68,780 acres more than the corresponding area for 1909-10. Of this total the New South Wales area represented about 48 per cent., that in Queensland 24 per cent., while that in Victoria amounted to 19 per cent. of the total. The principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States from 1890 onwards are furnished in the following table:—

AREA UNDER GREEN FORAGE, 1890-1 to 1910-11.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1 ...	37,473	10,091	9,546	7,349	161	1,497	66,117
1895-6 ...	66,833	25,939	19,552	7,309	430	1,883	121,946
1900-1 ...	78,144	18,975	41,445	13,136	1,024	3,749	156,473
1901-2 ...	113,060	32,795	39,793	13,695	1,563	4,262	205,168
1902-3 ...	109,353	31,145	51,279	14,937	636	3,509	120,859
1903-4 ...	77,130	33,165	26,576	19,241	672	3,212	159,996
1904-5 ...	87,718	29,902	35,861	20,362	1,643	4,266	179,752
1905-6 ...	95,058	34,041	66,183	23,842	1,873	4,882	225,879
1906-7 ...	122,914	36,502	50,513	17,985	3,265	5,326	236,505
1907-8 ...	260,810	59,897	91,444	15,434	4,773	6,367	438,725
1908-9 ...	235,539	63,066	87,675	16,086	4,902	6,243	413,511
1909-10 ...	118,960	56,586	100,493	17,226	6,068	6,749	306,082
1910-11 ...	179,382	71,826	89,667	*20,747	4,545	8,695	374,862

\* Including 19 acres Northern Territory.

**2. Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States, and the Commonwealth total for the season 1910-11 may be taken approximately as £1,709,000, or about £2 17s. 7d. per acre.

**3. Relation to Population.**—Particulars concerning the area under green forage per 1000 of the population of the Commonwealth and the several States for the past ten seasons are given hereunder:—

## AREA UNDER GREEN FORAGE PER 1000. OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.*	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	82	27	79	38	8	24	54
1902-3 ...	78	26	100	42	3	20	54
1903-4 ...	54	28	51	54	3	18	41
1904-5 ...	60	25	68	57	7	23	45
1905-6 ...	64	28	125	66	7	26	56
1906-7 ...	83	30	94	49	13	29	58
1907-8 ...	171	49	168	41	19	34	105
1908-9 ...	151	50	157	42	19	33	98
1909-10 ...	74	44	174	44	23	35	71
1910-11 ...	109	55	150	51	16	45	85

\* Exclusive of Northern Territory.

## § 13. Sugar-Cane.

1. **Area.**—Sugar-cane is grown for sugar-making purposes in only two of the States of the Commonwealth, viz., Queensland and New South Wales, and much more extensively in the former than the latter. Thus of the total area of 155,542 acres under sugar-cane in the Commonwealth for the season 1910-11 there were 141,779 acres, or about 91 per cent., in Queensland. Sugar-cane growing appears to have been started in the Commonwealth in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of twenty acres for the season 1862-3. In the following season the New South Wales records shew that an area of two acres was devoted to the crop in the mother State. The area under cane in New South Wales reached its maximum in 1895-6 with a total of 32,927 acres. It then fell continuously to 1902-3, when it was lower than for any previous season since 1889-90. From 1902-3 to 1906-7 it remained practically stationary, but since then it has fallen every year and in 1910-11 had dropped to 13,763 acres, the lowest area under sugar-cane since 1882-3. In Queensland, on the other hand, although fluctuations in area are in evidence throughout, the general trend has been one of satisfactory increase, the area under cane for the season 1910-11 being the highest on record, that for 1905-6 being the next highest and that for 1906-7 only a little short of it. In 1907-8 the area in Queensland declined to 126,810 acres, and in 1908-9 still further to 123,902 acres, but there was a marked increase in 1909-10, while in 1910-11 there was a further increase when it rose to 141,779 acres. The area under sugar-cane in the Commonwealth from 1865 onwards is given in the following table :—

## AREA UNDER SUGAR-CANE, 1865-6 to 1910-11.

Season.	N.S.W.	Queensland.	C'wealth.	Season.	N.S.W.	Queensland.	C'wealth.
	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.
1865-6	141	450	591	1902-3	20,160	85,338	105,498
1870-1	4,082	6,342	10,424	1903-4	20,182	111,516	131,698
1875-6	6,454	13,459	19,913	1904-5	21,525	120,317	141,842
1880-1	10,971	20,224	31,195	1905-6	21,805	134,107	155,912
1885-6	16,419	59,186	75,605	1906-7	20,580	133,284	153,864
1890-1	20,446	50,922	71,368	1907-8	17,953	126,810	144,763
1895-6	32,927	77,247	110,174	1908-9	16,981	123,902	140,883
1900-1	22,114	108,535	130,649	1909-10	14,083	128,178	142,261
1901-2	20,809	112,031	132,840	1910-11	13,763	141,779	155,542

**2. Productive and Unproductive Cane.**—The areas given in the preceding table represent the total area on which sugar-cane was grown during the seasons specified for purposes other than green forage. The whole area, however, was not in any case cut for crushing during that season, there being always a considerable amount of "stand over" cane, as well as a small quantity required for plants. In the season 1910-11 the New South Wales total comprised 5596 acres of productive and 8167 acres of unproductive cane, while in the case of Queensland the productive cane amounted to 94,641 acres and the unproductive to 47,138 acres.

**3. Yield of Cane.**—Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897-8. In that season the total for the Commonwealth was 1,073,883 tons, as against 1,294,650 tons for 1909-10. The average yield per acre of productive cane is much higher in New South Wales than in Queensland, the average during the last decade being 22.18 for the former and 15.81 for the latter State. During the six seasons 1901-2 to 1906-7 in the case of New South Wales the yield remained practically constant at about 21 tons per acre. In 1907-8 the yield in New South Wales was so excellent that, notwithstanding the comparative smallness of the area cultivated, the aggregate amount of cane produced was the largest in that State since 1898-9. In 1909-10, on the other hand, owing mainly to the decline in area of productive cane, the total yield amounted to only 131,081 tons, the lowest for the State since 1888. In 1910-11 there was a further decline in the acreage of productive cane; the yield of over 28½ tons per acre, however, was so excellent that the production exceeded that of the previous season by 29,230 tons of cane. In Queensland the average yield per acre for 1910-11 was by far the highest recorded for that State, viz., 19.45 tons. Particulars relative to the total and average yields of the Commonwealth sugar crops for the seasons 1901-2 to 1910-11 are as follows:—

YIELD OF SUGAR-CANE, 1901-2 to 1910-11.

Season.	Total Yield of Cane.			Average Yield per Acre of Productive Cane.		
	N.S.W.	Queensland.	C'wealth.	N.S.W.	Queensland.	C'wealth.
	Tons.	Tons.	Tons	Tons.	Tons.	Tons.
1901-2 ...	187,711	1,180,091	1,367,802	21.36	15.10	15.73
1902-3 ...	183,105	641,927	825,032	20.90	10.86	12.16
1903-4 ...	227,511	823,875	1,051,886	21.94	13.65	14.86
1904-5 ...	199,640	1,326,989	1,526,629	20.43	16.04	16.50
1905-6 ...	201,998	1,415,745	1,617,743	19.59	14.73	15.20
1906-7 ...	221,560	1,728,780	1,950,340	21.35	17.61	17.96
1907-8 ...	277,390	1,665,028	1,942,418	27.97	17.64	18.62
1908-9 ...	144,760	1,433,315	1,578,075	20.83	15.54	15.91
1909-10 ...	131,081	1,163,569	1,294,650	20.23	14.53	14.95
1910-11 ...	160,311	1,840,447	2,000,758	28.65	19.45	19.96

A preliminary estimate for Queensland for the season 1911-12 states that the prospects are extremely favorable, but that the total yield of cane in that State will probably be somewhat below that of the previous season in the absence of the unusually large "stand over" which obtained in 1910-11, unless the average tonnage per acre for 1911-12 season is very much in excess of the record average yield of its predecessor.

**4. Relation to Population.**—The sugar-cane production of the Commonwealth during the past five seasons has averaged about 8½ cwt. per head of population. In Queensland, the principal sugar-producing State, the production of cane per head has ranged between 2 tons in 1909-10 and 3½ tons in 1906-7. Details for the period 1906-7 to 1910-11 are as follows:—

## SUGAR-CANE PRODUCTION PER 1000 OF POPULATION.

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales ... ..	149	182	93	81	98
Queensland ... ..	3,208	3,051	2,573	2,014	3,072
Commonwealth ... ..	477	467	373	299	452

5. **Quality of Cane.**—The quantity of cane required to produce a ton of sugar varies considerably not only with the district in which the cane is grown but also with the season. In Queensland, for instance, during the seasons 1902-3 to 1906-7 the sugar content of the cane crushed continuously diminished, so that while in 1902-3 the quantity of cane used in producing a ton of sugar was 8.38 tons, in the season 1906-7 the quantity required was 9.38 tons, the production in the former case being approximately 12 per cent. and in the latter 10½ per cent. of the weight of cane crushed. For the season 1907-8, the cane was of much better quality, and the quantity required to produce a ton of sugar was only 8.84 tons, the sugar content representing in this case somewhat more than 11½ per cent. of the weight of cane crushed. In 1908-9, owing in large measure to the effect of frosts, the quantity of cane required to produce one ton of sugar was increased to 9.49 tons, the sugar thus representing only about 10½ per cent. of the weight of cane crushed, while in 1909-10 only 8.65 tons of cane were required to each ton of sugar, the sugar representing about 11½ per cent. of the weight of cane crushed. The especially favourable weather existing throughout 1910 resulted in a very high average quantity of cane per acre being obtained, while the moisture which caused this led to a slight diminution in the saccharine density as compared with the previous year. In 1910-11 the quantity of cane required to produce one ton of sugar was 8.73 tons, the sugar produced representing about 11½ per cent. of the weight of cane crushed. It should be noted also that in 1901-2 no less than 9.76 tons of cane were needed to produce a ton of sugar. It may be remarked in this connection that the systematic study of the beet in Germany shewed that by suitable culture its sugar content might be greatly increased, and this is by no means impossible in the case of sugar-cane.

6. **Sugar Bounties.**—The provision of bounties or similar aids to the sugar-growers of the Commonwealth early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry, whilst at the same time diminishing the employment of coloured labour in connection therewith. The earliest legislative provision made with this object in view was that contained in the Excise Tariff 1902, under which an excise duty of three shillings per cwt. of manufactured sugar was charged, and a rebate of four shillings per ton allowed on all sugar-cane delivered for manufacture, in the production of which white labour only had been employed after 28th February, 1902. This rebate was calculated on the basis of cane giving 10 per cent. of sugar, and was increased or reduced proportionately according to any variation from this standard, that is to say, the rebate amounted to two shillings per cwt. of the sugar content of the cane treated. In actual practice it was found that this system of rebates was producing effects that had not been anticipated at the time the legislation was passed, and that the greater part of the cost of substituting white for coloured labour in the sugar-growing industry was thereby being imposed upon the States engaged in the industry, viz., Queensland and New South Wales, instead of being a charge upon the whole Commonwealth. To remedy this state of affairs, the Sugar Rebate Abolition Act of 1903 was passed on 30th July, 1903, and the Sugar Bounty Act 1903 received assent on the same day. The rate of bounty provided by this latter Act was, as in the case of the rebate mentioned above, four shillings per ton of cane grown by white labour giving 10 per cent. of sugar, the bounty to be increased or reduced proportionately according to any



variation from this standard. This Act remained in force until 31st December, 1906, when it was superseded by the provisions of the Sugar Bounty Act 1905, which extended the principle of bounties to the end of the year 1912, but stipulated that during the years 1911 and 1912 the rates payable on cane delivered should be respectively two-thirds and one-third of the rates prevailing during the earlier years of the period. During the 1910 Session of the Commonwealth Parliament an Amending Act (the Sugar Bounty Act 1910) was passed repealing the provision for successive decrements in the amount of bounty payable, and thus leaving the bounty at full rate applicable for an indefinite time. The rate of bonus allowed under this Act is six shillings per ton of cane of 10 per cent. quality grown by white labour, provided that the rates of wages and conditions of employment of such labour are fair and reasonable, in accordance with the provisions of the Act. Under the Excise Tariff 1905, assented to on 21st December, 1905, the excise duty on sugar was, from 1st January, 1907, increased to four shillings per cwt. of manufactured sugar in place of three shillings formerly imposed. This rate of duty was, under the original Act, to continue in force until 31st December, 1910, reducing to 2s. 8d. per cwt. for 1911, 1s. 4d. per cwt. for 1912, and being abolished after 31st December, 1912. The Excise (Sugar) Act 1910, however, repealed these provisions for reduction and abolition, leaving the duty in force at the full rate for an indefinite time.

**7. Cost of Bounties.**—The amounts paid by the Commonwealth Government in sugar bounties and the expenses in connection therewith during the period 1902-3 to 1910-11 are shewn in the following table:—

**SUGAR BOUNTIES AND EXPENSES. 1902-3 to 1910-11.**

Year.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£	£	£	£	£
Bounties	60,827	90,806	121,408	148,106	328,210	577,148	477,090	402,131	630,610
Expenses	*	6,239	6,770	6,603	7,706	7,474	6,616	5,648	6,862
	*	97,045	128,178	154,709	335,916	584,622	483,706	407,779	637,472

\* Not available.

**8. Collection of Sugar Excise.**—The table hereunder contains particulars concerning the net amount of excise duty on sugar collected in respect of the several States for the ten years 1901-2 to 1910-11. In this table refunds and drawbacks have been deducted and the requisite adjustment has been made between the States:—

**SUGAR EXCISE, 1901-2 to 1910-11.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1901-2 ...	119,577	40,189	10,658	781	8,184	10,156	189,545
1902-3 ...	166,952	10,715	61,523	1,332	7,294	13,701	261,517
1903-4 ...	166,646	Dr. 2,307	73,634	1,413	18,464	14,267	272,117
1904-5 ...	183,335	163,247	70,576	34,626	30,980	20,863	503,627
1905-6 ...	183,457	149,120	98,015	45,921	35,339	24,227	536,079
1906-7 ...	211,625	138,982	83,826	50,564	37,109	24,484	546,590
1907-8 ...	266,876	226,638	103,272	63,788	46,238	35,116	741,928
1908-9 ...	250,329	229,409	116,215	69,267	49,434	36,122	750,776
1909-10 ...	137,672	229,981	126,626	9,373	32,526	12,538	548,716
1910-11 ...	*	*	*	*	*	*	794,649

\* Particulars for each State not available for 1910-11.

**9. Production by White and Coloured Labour.**—The following table contains particulars furnished by the Commonwealth Treasury concerning the production of sugar in New South Wales and Queensland during the past nine seasons, and furnishes

an indication of the decline in the employment of coloured labour in the sugar industry during that period :—

### SUGAR PRODUCTION, 1902-3 to 1910-11.

Season.	New South Wales.			Queensland.			Commonwealth.		
	Sugar Produced by—			Sugar Produced by—			Sugar Produced by—		
	White Labour.	Coloured Labour.	Total.	White Labour.	Coloured Labour.	Total.	White Labour.	Coloured Labour.	Total.
1902-3 ...	Tons. 19,434	Tons. 1,526	Tons. 20,960	Tons. 12,254	Tons. 65,581	Tons. 77,835	Tons. 31,688	Tons. 67,107	Tons. 98,795
1903-4 ...	19,236	2,561	21,797	24,406	65,456	89,862	43,642	68,017	111,659
1904-5 ...	17,812	1,838	19,650	39,404	105,616	145,020	57,216	107,454	164,670
1905-6 ...	18,019	1,964	19,983	50,897	101,362	152,259	68,916	103,326	172,242
1906-7 ...	21,805	1,613	23,418	127,539	54,619	182,158	149,344	56,232	205,576
1907-8 ...	23,247	934	29,181	162,480	22,583	185,063	190,727	23,517	214,244
1908-9 ...	14,351	964	15,315	132,049	18,358	150,407	146,400	19,322	165,722
1909-10 ...	13,839	815	14,654	118,298	14,451	132,749	132,137	15,266	147,403
1910-11 ...	17,986	892	18,828	191,486	15,778	207,264	209,422	16,670	226,092

During the period under review the proportion of sugar produced by coloured labour declined from 68 per cent. of the total for 1902-3 to less than 7½ per cent. of the total for 1910-11.

10. **Imports and Exports of Sugar.**—Notwithstanding the increase in the production of sugar in evidence in the Commonwealth during recent years, Australia's over-sea import trade in cane sugar remained fairly extensive until 1906, the principal countries engaged in supplying this commodity being Java, Mauritius, and Fiji. In 1907 the exports of sugar exceeded the imports for the first time, the value of the net exports being £166,121. In 1908 the imports exceeded the exports by 96,218 cwt. in quantity and £37,080 in value; while in the following year the excess of imports over exports was 1,832,943 cwt., value £1,004,308. In 1910 the net imports fell in quantity to 548,479 cwt. and in value to £297,958. The principal countries to which Australian sugar is exported are South African Union, New Zealand and New Caledonia, but the bulk of the sugar exported from the Commonwealth is not of Australian origin, but merely a re-export of sugar produced elsewhere. Thus of 161,024 cwt. exported during 1909, only 4099 cwt. were of Australian origin. The sugar so re-exported comes mainly from Fiji, Java, and Mauritius. Particulars concerning the imports and exports of cane sugar for the years 1901 to 1910 are as follows:—

### IMPORTS AND EXPORTS OF CANE SUGAR, 1901 to 1910.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.*	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£	cwt.	£
1901 ...	1,970,883	1,239,550	94,764	68,876	1,876,119	1,170,674
1902 ...	1,862,063	1,120,554	66,736	48,751	1,795,327	1,071,803
1903 ...	1,830,595	1,054,338	47,295	33,242	1,783,300	1,021,096
1904 ...	760,702	415,120	58,882	42,699	701,820	372,421
1905 ...	498,670	276,157	223,161	155,514	275,509	120,643
1906 ...	839,519	439,916	185,072	140,466	654,447	299,450
1907 ...	123,351	77,259	365,213	243,380	— 241,862	— 166,121
1908 ...	391,048	245,495	294,830	208,415	96,218	37,080
1909 ...	1,993,967	1,122,863	161,024	118,555	1,832,943	1,004,308
1910 ...	680,166	406,709	131,687	108,751	548,479	297,958

\* — signifies net exports.

## § 14. Vineyards.

1. **Nature and Extent.**—The introduction of the vine into Australia has been set down by different investigators as at various dates, the years 1815 and 1828 being principally favoured. It would seem, however, that the vine was really brought out with the First Fleet, which initiated the colonisation of Australia, in 1788, and that consequently the Australian vine is as old as Australian settlement. As already mentioned a report of Governor Hunter's gives the area under vines in 1797 as 8 acres. From New South Wales the vine spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area which they have devoted to its cultivation. In Queensland and Western Australia also, vine-growing has been carried on for many years, but in neither State has the industry progressed with the rapidity attained in Victoria and South Australia. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz.—(i.) for wine-making, (ii.) for table use, (iii.) for drying. The total area under vines in the several States from 1860 onwards is given in the following table:—

COMMONWEALTH VINEYARDS, 1860-1 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.		Acres.
1860-1	1,584	1,138	—	3,180	335	There are no vineyards in Tasmania.	6,237
1865-6	2,126	4,078	110	6,629	634		13,577
1870-1	4,504	5,466	416	6,131	710		17,227
1875-6	4,459	5,081	376	4,972	675		15,563
1880-1	4,800	4,980	739	4,337	659		15,515
1885-6	5,247	9,775	1,483	5,142	624		22,271
1890-1	8,044	20,686	1,981	9,535	1,024		41,270
1895-6	7,519	30,275	2,021	17,604	2,217		59,636
1900-1	8,441	30,634	2,019	20,158	3,325		64,577
1901-2	8,606	28,592	1,990	20,860	3,629		63,677
1902-3	8,790	28,374	1,559	21,692	3,528		63,943
1903-4	8,940	28,513	2,069	22,617	3,324		65,463
1904-5	8,840	28,016	2,194	23,210	3,413		65,673
1905-6	8,754	26,402	2,044	23,603	3,541		64,344
1906-7	8,521	25,855	2,070	22,586	3,525		62,557
1907-8	8,483	26,465	1,973	21,080	3,231		61,232
1908-9	8,251	24,430	1,616	22,031	3,122		59,450
1909-10	8,330	22,768	1,695	22,441	2,917		58,151
1910-11	8,321	23,412	1,634	22,952	2,795		59,114

The area devoted to vines in the Commonwealth attained its highest point in the season 1904-5, when a total of 65,673 acres was reached. In the course of the six following seasons this area diminished by 6559 acres, the decline being in evidence in all the States.

The wine-growing industry in Australia, more particularly in Victoria and New South Wales, received a severe check on account of various outbreaks of phylloxera which took place in different parts of these States. With a view to its eradication extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resisting vines, was prohibited.

In the States of Victoria and South Australia increases in the area under vines were in evidence in 1910-11, while in Western Australia, Queensland and New South Wales, small decreases were shewn.

**2. Wine Production.**—The production of wine in Australia has not increased as rapidly as the suitability of soil and general favourableness of conditions would appear to warrant. The cause of this is probably twofold, being in the first place due to the fact that the Australians are not a wine-drinking people and consequently do not provide a local market for this product, and in the second to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and it may be confidently expected that when their qualities are duly recognised the wine production of Australia will exhibit a rapid development. Particulars concerning the quantity of wine produced in the several States during the past ten seasons are contained in the table given hereunder:—

#### AUSTRALIAN WINE PRODUCTION, 1901-2 to 1910-11.

Season.	New South Wales.	Victoria.	Queens-land.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No production of wine in Tasmania.	Gallons.
1901-2 ...	868,479	1,981,475	148,835	2,631,563	185,735		5,816,087
1902-3 ...	806,140	1,547,188	100,852	2,573,424	158,853		5,186,457
1903-4 ...	1,086,820	2,551,150	38,558	2,445,270	138,371		6,260,169
1904-5 ...	928,160	1,832,386	60,433	2,845,853	185,070		5,851,902
1905-6 ...	831,700	1,726,444	66,926	2,755,947	208,911		5,589,928
1906-7 ...	1,140,000	2,044,833	65,016	2,495,434	195,660		5,940,943
1907-8 ...	778,500	1,865,600	90,191	2,061,987	153,755		4,450,033
1908-9 ...	736,262	1,437,106	77,698	3,132,247	132,488		5,515,801
1909-10 ...	808,870	991,941	91,410	2,569,797	140,559		4,602,577
1910-11 ...	805,600	1,362,420	74,306	3,470,058	153,665		5,866,049

**3. Relation to Population.**—In relation to population the area of the vineyards of the several States exhibits a well-marked decline during the past ten seasons, the Commonwealth total having fallen during the period from 17 to 13 acres per 1000 of the population. Details for the period are furnished in the succeeding table:—

#### AREA OF VINEYARDS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	6	24	4	58	19	...	17
1902-3 ...	6	23	3	61	17	...	17
1903-4 ...	6	24	4	63	15	...	17
1904-5 ...	6	23	4	65	14	...	17
1905-6 ...	6	22	4	65	14	...	16
1906-7 ...	6	21	4	62	14	...	15
1907-8 ...	6	21	4	56	13	...	15
1908-9 ...	5	20	3	57	12	...	14
1909-10 ...	5	18	3	57	11	...	13
1910-11 ...	5	18	3	56	10	...	13

\* Exclusive of Northern Territory.

**4. Imports and Exports.**—During the past ten years the importations of wine into the Commonwealth have exhibited a marked fluctuation, declining continuously in value from £161,945 in 1901 to £96,870 in 1904, then increasing continuously to

£133,114 in 1908 and decreasing again in 1909 to £116,021, and again increasing in 1910 to £126,402. The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Germany, the greater portion of the sparkling wines coming from France and of still wines from Spain and Portugal. Particulars relative to the importations of wine into the Commonwealth during the past ten years are given hereunder:—

#### COMMONWEALTH IMPORTS OF WINE, 1901 to 1910.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901	55,341	165,472	220,813	104,700	57,245	161,945
1902	46,824	134,513	181,337	80,941	46,828	127,769
1903	41,211	81,222	122,433	78,869	29,014	107,883
1904	38,738	70,982	109,720	69,643	27,227	96,870
1905	38,933	74,358	113,291	71,753	28,231	99,984
1906	43,324	71,980	115,304	81,448	24,685	106,133
1907	50,393	67,906	118,299	94,549	26,397	120,946
1908	56,806	68,252	125,058	106,108	27,006	133,114
1909	47,669	60,946	108,615	91,046	24,975	116,021
1910	50,982	70,903	121,885	97,296	29,106	126,402

The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, a small but fairly regular export trade being also carried on with India, Ceylon, Fiji, and the South Sea Islands. Details concerning the exports of wine from Australia during the ten years 1901 to 1910 are given in the following table:—

#### COMMONWEALTH EXPORTS OF WINE, 1901 to 1910.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901	2,936	863,147	866,083	6,972	122,751	129,723
1902	3,201	1,075,713	1,078,914	5,989	142,994	148,983
1903	2,194	718,284	720,478	4,161	101,016	105,177
1904	2,525	789,032	791,557	4,440	103,272	107,712
1905	2,749	937,932	940,681	4,990	107,988	112,978
1906	2,439	717,821	720,260	4,637	93,046	97,683
1907	2,771	979,527	982,298	5,233	121,811	127,044
1908	2,824	728,421	731,245	4,541	98,333	102,874
1909	2,649	974,413	977,062	4,455	121,116	125,571
1910	2,880	949,033	951,913	5,340	123,593	128,933

The sparkling wine included in the foregoing table consists mainly of foreign wine re-exported.

**5. Other Viticultural Products.**—In addition to grapes for wine-making purposes, large quantities are grown in all the States for table use, whilst, particularly in Victoria and South Australia, the drying of raisins and currants is also carried on. The quantities of table grapes grown in the several States during the past ten seasons are as follows:—

TABLE GRAPES, 1901-2 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.*	S. Aust.*	W. Aust.*	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	3,475	5,110	750	2,800	1,100	...	13,235
1902-3 ...	3,561	4,327	300	2,900	1,200	...	12,288
1903-4 ...	4,213	3,862	780	3,000	1,200	...	13,055
1904-5 ...	2,933	3,186	950	3,100	1,500	...	11,669
1905-6 ...	2,749	3,008	870	3,100	1,700	...	11,427
1906-7 ...	5,470	5,184	1,130	3,000	1,700	...	16,484
1907-8 ...	2,978	3,325	1,044	2,805	2,715	...	12,867
1908-9 ...	3,150	3,018	1,336	3,214	1,982	...	12,700
1909-10 ...	4,181	3,189	1,520	2,496	3,928	...	15,314
1910-11 ...	3,914	2,913	1,254	2,531	3,200	...	13,812

\* Estimated for seasons prior to 1907-8.

Statistics of the quantities of raisins and currants dried are available for a series of years for Victoria and South Australia, and are as follows for the past ten seasons:—

RAISINS AND CURRANTS DRIED, 1901-2 to 1910-11.

Season.	Raisins.		Currants.	
	Victoria.	Sth. Australia.	Victoria.	Sth. Australia.
	lbs.	lbs.	lbs.	lbs.
1901-2 ...	3,083,665	822,080	285,157	382,256
1902-3 ...	3,979,798	1,294,944	416,890	547,232
1903-4 ...	5,986,060	1,463,056	838,955	1,165,472
1904-5 ...	3,393,117	974,064	669,108	1,423,968
1905-6 ...	4,813,240	1,334,928	717,156	1,629,824
1906-7 ...	10,990,224	1,805,776	1,313,760	1,608,432
1907-8 ...	7,685,104	2,742,656	1,169,280	2,235,184
1908-9 ...	7,788,032	3,136,784	1,336,048	2,738,288
1909-10 ...	9,076,928	3,114,496	3,069,696	4,037,824
1910-11 ...	8,883,616	3,891,440	2,956,128	4,509,232

In New South Wales, Queensland, and Western Australia also small quantities of raisins and currants are dried, but until recently no statistics were collected. The quantity so produced in New South Wales amounted to 100,912 lbs. in 1907-8, 160,720 lbs. in 1908-9, 165,984 lbs. in 1909-10, and 297,472 lbs. in 1910-11. For Queensland and Western Australia there are no particulars available.

## § 15. Orchards and Fruit Gardens.

1. *Nature and Extent.*—Fruit-growing has made rapid progress in the Commonwealth during recent years, the area devoted thereto having increased in the past ten years by no less than 38,381 acres. The States in which the increase was most marked were:—Tasmania, 14,449 acres; Western Australia, 10,662 acres; Victoria, 7320 acres; and South Australia, 6095 acres. During the same period the Queensland fruit-growing area increased slightly, while that in New South Wales exhibited a decline of 915 acres. The increased areas in Tasmania and Western Australia are mainly due to extensive plantings of apple trees with a view to the possibilities of the London market for fresh fruit. The total area devoted to orchards and fruit gardens in the several States is given hereunder:—

## COMMONWEALTH ORCHARDS AND FRUIT GARDENS, 1901-2 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	48,448	50,055	14,396	16,315	6,076	11,485	146,775
1902-3 ...	48,019	50,478	12,818	17,376	6,872	12,675	148,238
1903-4 ...	48,832	51,357	15,607	18,725	7,938	14,134	156,593
1904-5 ...	47,340	52,751	15,882	18,872	9,756	15,461	160,062
1905-6 ...	46,615	52,274	15,390	19,320	11,026	16,519	161,144
1906-7 ...	46,177	54,021	14,249	18,199	12,517	18,050	163,213
1907-8 ...	46,714	54,111	14,397	20,736	13,900	19,441	169,299
1908-9 ...	45,880	54,946	14,104	20,855	15,016	20,757	171,558
1909-10 ...	45,892	56,108	15,360	21,760	15,609	24,069	178,798
1910-11 ...	47,533	57,375	15,153	*22,423	16,738	25,934	196,156

\* Including 13 acres Northern Territory.

The varieties of fruit grown differ materially in various parts of the several States, and range between such fruits as the pineapple, paw-paw, mango, and guava of the tropics, and the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, plum, peach, apricot, cherry, and pear. In New South Wales citrus fruits (orange, lemon, etc.) occupy the leading position, although apples, pears, peaches, plums, and apricots are also extensively grown. In Queensland the banana, the orange, the pineapple, the apple, the peach, the mango, and the plum are the varieties most largely grown. In South Australia, in addition to the apple, pear, peach, apricot, plum, orange, and lemon, the almond and the olive are also largely grown. In Western Australia the apple, orange, peach, pear, plum, fig, and apricot are the sorts chiefly grown, while in Tasmania, although the apple represents more than two-thirds of the area in that State devoted to fruit-growing, small fruits, such as the currant, raspberry, and gooseberry, are very extensively grown, and the balance of the area is mainly occupied with the pear, plum, apricot, peach, and cherry.

**2. Relation to Population.**—In relation to population the orchards and fruit gardens of the Commonwealth have exhibited an increase during the past nine seasons equal to the decline which was experienced in the case of vineyards. Taking the two in conjunction the relative area under vineyards and orchards has, during the period, remained practically stationary at about 55 acres per 1000 of population. Details for the ten seasons 1901-2 to 1910-11 are as follows :—

## AREA OF ORCHARDS AND FRUIT GARDENS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	35	41	28	45	31	66	38
1902-3 ...	34	42	25	49	32	71	38
1903-4 ...	34	43	30	52	35	77	40
1904-5 ...	33	44	30	53	41	83	40
1905-6 ...	31	43	29	53	44	89	40
1906-7 ...	31	44	26	50	49	97	40
1907-8 ...	31	44	26	55	55	103	41
1908-9 ...	29	44	25	54	58	109	41
1909-10 ...	28	44	27	55	59	125	41
1910-11 ...	29	44	25	55	60	134	42

\* Excluding Northern Territory.

**3. Commonwealth Imports and Exports.**—A very considerable fruit trade, both import and export, is carried on by the Commonwealth with overseas countries, the major portion of the importations consisting of dried fruits, while the bulk of the exports is made up of fresh fruits. Amongst the imports the principal dried fruits are currants, dates, sultanas, and raisins, and the principal fresh fruits bananas, oranges, lemons, and apples. The currants imported are mainly of Greek origin, the dates of Arabian, Persian, and Turkish, the raisins mainly of French and Turkish, and the sultanas of Turkish origin. Of the fresh fruits imported during 1910 the bananas were chiefly from Fiji, the oranges and lemons from Italy, and the apples from Canada. The dried fruits imported during the year were valued at £89,076, and the fresh at £90,100. In 1907 a very marked development in the trade in Australian dried fruits took place, the total export for the year being valued at £76,872, of which £71,506 represented Australian fruits and £5366 re-exports of foreign fruits. In 1908 the total export of dried fruits from Australia was valued at £35,359, of which £33,111 represented Australian fruits, and £2248 re-exports of foreign fruits. There was a further decline in 1909, when the total value of exports was only £13,013, made up of £11,826 of Australian produce, and £1187 of re-exports. There was a small increase in the total exports in 1910, which amounted to £14,765; this, however, was accounted for by re-exports of the value of £2720, the exports of dried fruits of Australian origin shewing a decline amounting to £977. The principal consignees of Australian dried fruits exported were United Kingdom, Canada, and New Zealand. The fresh fruits exported during the year were valued at £322,694, and consisted mainly of apples. These were all of Australian origin with the exception of re-exports valued at £1987. The principal countries to which these were sent were the United Kingdom, Germany, New Zealand, Brazil, Java, and India. The value of the net imports of dried fruits for the year 1910 was £74,311, whilst in the case of fresh fruits, the value of the net exports was £232,594, the largest net export value since 1904.

Particulars concerning the overseas imports and exports of dried fruits for the ten years 1901 to 1910 are as follows:—

### COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF DRIED FRUITS,

1901 to 1910.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901	14,265,731	179,305	831,996	14,206	13,433,735	165,099
1902	15,312,229	165,926	942,342	14,024	14,369,887	151,902
1903	13,479,256	106,439	913,008	11,775	12,566,248	94,664
1904	14,267,310	107,117	1,729,725	18,497	12,537,585	88,620
1905	17,285,240	134,178	344,174	5,579	16,941,066	128,599
1906	15,659,620	137,732	187,710	2,752	15,471,910	134,980
1907	13,250,392	134,736	5,281,608	76,872	7,968,784	57,864
1908	10,351,443	99,518	2,509,640	35,359	7,841,803	64,159
1909	13,242,198	121,059	1,089,730	13,013	12,152,468	108,046
1910	9,885,118	89,076	973,171	14,765	8,911,947	74,311

Similar information with regard to the Commonwealth overseas trade in fresh fruits for the same period is contained in the table given hereunder:—



**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF FRESH FRUITS,  
1901 to 1910.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Centals.	£	Centals.	£	Centals.	£
1901	*	45,955	*	167,926	*	121,971
1902	*	57,744	*	142,613	*	84,869
1903	91,976	47,303	371,158	216,992	279,182	169,689
1904	50,897	31,137	467,343	263,767	416,946	232,630
1905	49,659	32,654	393,982	207,418	344,323	174,764
1906	204,561	82,655	265,743	173,190	61,182	90,535
1907	189,052	95,015	435,534	266,160	246,482	171,145
1908	166,341	107,666	377,926	263,307	211,585	155,641
1909	250,311	146,081	372,308	243,699	121,997	97,618
1910	137,733	90,100	500,661	322,694	362,928	232,594

\* Not available.

4. **Jams and Jellies.**—A small oversea trade in jams and jellies is carried on by the Commonwealth, the value of the imports for the year 1910 amounting to £8859, and of the exports to £28,372. The country of origin of the bulk of the importations is the United Kingdom, while the destinations of the exports are principally South Africa, Portuguese East Africa, Ceylon, and Fiji. Particulars relative to imports and exports for the ten years 1901 to 1910 are as follows:—

**COMMONWEALTH OVERSEA TRADE IN JAMS AND JELLIES, 1901 to 1910.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901 ...	1,312,377	23,358	4,140,072	64,389	2,827,695	41,031
1902 ...	837,746	13,207	5,159,688	77,833	4,321,942	64,626
1903 ...	379,300	7,410	2,097,371	40,386	1,718,071	32,976
1904 ...	384,159	7,270	1,526,747	21,962	1,142,588	14,692
1905 ...	317,182	7,010	1,772,524	25,385	1,455,342	18,375
1906 ...	379,129	8,277	1,580,228	24,009	1,201,099	15,732
1907 ...	297,634	6,967	1,639,239	24,561	1,341,605	17,594
1908 ...	280,525	6,898	1,714,060	26,155	1,433,535	19,257
1909 ...	334,738	7,956	1,706,400	26,124	1,371,662	18,168
1910 ...	365,752	8,859	1,814,002	28,372	1,448,250	19,513

5. **Preserved Fruit.**—Details concerning the quantities and values of preserved fruit imported into and exported from the Commonwealth cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables, other than fresh fruits, dried fruits, potatoes, and onions, imported into Australia during 1910 was £55,155, and the corresponding value of exports was £21,598.

## § 16. Minor Crops.

1. **Nature and Extent.**—In addition to the leading crops which in the foregoing pages have been dealt with in some detail, there are many others which, owing either to their nature or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are those which may be classed under the heads of Market Gardens, Nurseries, Grass Seed, Tobacco, Hops, and Millet, while the possibilities of Cotton-growing in the tropical portions of the Commonwealth have in recent years received considerable attention, although the industry cannot yet be said to have assumed definite shape. The total area in the Commonwealth during the season 1910-11 devoted to minor crops was 72,530 acres, of which market gardens accounted for 31,101 acres.

2. **Market Gardens.**—Under this head are included all areas on which are grown mixed vegetables for sale. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., these crops are usually not included with market gardens, but are shewn either under some specific head, or under some such general head as "Other Root Crops," or "All other Crops." The area under market gardens in the several States of the Commonwealth during each of the ten seasons 1901-2 to 1910-11 is given in the table hereunder:—

COMMONWEALTH MARKET GARDENS, 1901-2 to 1910-11.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	7,834	8,752	2,328	9,005	2,142	1,746	31,807
1902-3 ...	8,263	7,937	2,171	9,489	2,262	1,893	32,015
1903-4 ...	8,754	8,455	2,563	9,964	2,463	1,685	33,884
1904-5 ...	8,827	7,904	2,099	10,160	3,533	1,759	34,287
1905-6 ...	9,119	7,333	2,089	10,688	3,550	1,778	34,557
1906-7 ...	9,550	7,906	1,953	8,379	3,789	2,210	33,787
1907-8 ...	10,052	9,022	2,365	2,961	3,543	1,791	29,734
1908-9 ...	10,331	9,279	2,875	2,818	3,471	1,603	30,377
1909-10 ...	10,254	10,214	2,677	2,734	3,481	1,720	31,130
1910-11 ...	9,813	10,778	2,317	*2,876	3,576	1,741	31,101

\* Including 58 acres Northern Territory.

The decline in the Commonwealth total for the season 1907-8 is due to the marked decrease in the area devoted to market gardens in South Australia, and to the smaller falling-off in the cases of Western Australia and Tasmania. In all the other States the area for 1907-8 was in excess of that for 1906-7. In the case of South Australia the falling-off is more apparent than real, being in large part due to a change in the classification of such crops introduced in connection with the new system of collection which came into force for 1907-8. It is believed that the figures given for the earlier years are considerably in excess of the truth.

3. **Grass Seed.**—Particulars concerning the growth of grass seed are available for 1910-11 for all the States except Western Australia. The total area under this crop during that season was 4261 acres, of which 1775 acres were in Tasmania, 1295 acres in Victoria, 1169 acres in Queensland, 17 acres in South Australia, and 5 acres in New South Wales. The total yield for 1910-11 was 79,236 bushels, or 18.6 bushels per acre.

4. **Tobacco.**—The tobacco-growing industry is one which has experienced marked fluctuations in Australia and which once promised to occupy an important place amongst the agricultural industries of the Commonwealth. Thus, as early as the season 1888-9 the area under this crop amounted to as much as 6641 acres, of which

4833 were in New South Wales, 1685 in Victoria, and 123 in Queensland. This promise of prosperity was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2000 acres, and that in Queensland to over 1000 acres, the total area under tobacco for the season 1910-11 was only 2080 acres, distributed as follows:—New South Wales, 1096 acres; Victoria, 329 acres; and Queensland, 655 acres. This decline in production appears to have been due to the comparatively small demand which existed in Australia for the locally-produced leaf, and to the fact that the cost of production and preparation in the Commonwealth prevented the Australian leaf from obtaining a footing in the outside markets. Probably under more favourable circumstances, and with greater attention given to the production of leaf of the best quality only, the industry is one which will eventually assume considerable proportions. In all the States in which its cultivation has been tried the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into the Commonwealth furnish an indication of the extensive local market which exists for an article grown and prepared in such a manner as to meet with the requirements of consumers. The value of the net importations of tobacco into the Commonwealth during the year 1910 amounted to £645,111, comprising unmanufactured tobacco (£440,350), cigars (£118,788), cigarettes (£37,726), manufactured tobacco (£47,155), and snuff (£1092).

5. **Pumpkins and Melons.**—The total area under this crop in the Commonwealth during 1910-11 was 11,989 acres, of which 5070 acres were in New South Wales, 2477 acres in Victoria, 4160 acres in Queensland, and 282 acres in Western Australia; the production for the first three named was 19,753, 23,851 and 15,402 tons respectively; the quantity produced in Western Australia is not available.

6. **Hops.**—Hop-growing in the Commonwealth is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1910-11 being 1163 acres, of which 1039 acres were in Tasmania, and 121 acres in Victoria. The Tasmanian area, though still small, has increased rapidly during the past nine years, the total for the season 1901-2 being only 599 acres. On the other hand, the Victorian area, which in 1901-2 was 307 acres, has diminished to 121 acres in 1910-11. The cultivation of hops was much more extensive in Victoria twenty-five years ago than at present, the area devoted to this crop in 1883-4 being no less than 1758 acres. During the year 1910 the net importations of hops into the Commonwealth represented a weight of 1,117,243 lbs. and a value of £59,288. The total value of the net importations of hops into Australia during the past ten years amounted to £500,109, thus indicating the existence of a regular and extensive local demand.

7. **Millet.**—Millet appears in the statistical records of three of the Commonwealth States, viz., New South Wales, Victoria, and Queensland. The total area devoted thereto in 1910-11 was 5569 acres, by far the greater portion, viz., 4467 acres, being in New South Wales. The particulars here given relate to millet grown for grain and fibre. That grown for green forage is dealt with in the section relating thereto.

8. **Nurseries.**—In all the States somewhat extensive areas are devoted to nurseries for raising plants, trees, etc., but statistics concerning the area so occupied for flowers, fruit trees, etc., are not available, and so far as they relate to forestry are given elsewhere.

9. **Cotton.**—Cotton-growing on a small scale has been tried in Queensland, but so far without very marked success. The area under cotton has fluctuated very considerably during the past five years, ranging during that period between 138 acres in 1906-7 and 540 acres in 1908-9. During 1910-11, 460 acres were devoted to this crop in Queensland, giving a yield of 151,438 lbs. of seed cotton, valued at £3786. Hopes are entertained that with the invention of a mechanical device for the picking of the cotton the industry will become firmly established, since the soil and conditions appear eminently suitable for the growth of this crop. Small areas in the Northern Territory have also been planted with cotton, and 15 acres were under cultivation in 1910-11. The crops, however, proved

a failure, owing to a tidal wave. The tropical portions of Western Australia have also long been regarded as suitable for its cultivation.

10. **Coffee.**—Queensland is the only State of the Commonwealth in which coffee-growing has been at all extensively tried, and here the results have up to the present time been far from satisfactory. The total area devoted to this crop reached its highest point in the season 1901-2, when an area of 547 acres was recorded. Since then the area continuously declined to 1906-7, when it was as low as 256 acres. During the season 1907-8 an improvement occurred and the total reached was 304 acres, succeeded by a fall to 285 acres in 1908-9 and 200 acres in 1910-11. In the last-mentioned season the yield amounted to 151,050 lbs., valued at £5664.

11. **Other Crops.**—Miscellaneous small crops are grown in the several States; amongst which may be mentioned tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

### § 17. Bounties on Agricultural Products.

1. **General.**—The Bounties Act of 1907 passed by the Federal Parliament in order to encourage the manufacture and production of certain articles in the Commonwealth, includes among the number of items on which bonuses are payable, several agricultural products. The most important of these, viz., sugar, has been referred to on page 393 of this publication. Minor products of the soil on which these bounties are payable are as set out in the following table :—

#### AGRICULTURAL PRODUCTS (OTHER THAN SUGAR) ON WHICH BOUNTIES ARE PAYABLE.

Article.	Period dating from 1st July, 1907, during or in respect of which Bounty may be paid.	Rates of Bounty.	Maximum amounts which may be paid in any one year.
Cotton, ginned ... ..	8 years	10 % on market value	£ 6,000
Fibres—			
New Zealand flax ... ..	10 "	10 " "	3,000
Flax and hemp ... ..	5 "	10 " "	8,000
Jute ... ..	5 "	20 " "	9,000
Sisal hemp ... ..	10 "	10 " "	3,000
Oil materials supplied to an oil factory for the manufacture of oil			
Cottonseed ... ..	8 "	10 " "	1,000
Linseed (flax seed) ... ..	5 "	10 " "	5,000
Rice, uncleaned ... ..	5 "	20s. per ton	1,000
Coffee, raw, as prescribed	8 "	1d. per lb.	1,500
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed ... ..	5 "	2d. "	4,000
Fruits—			
Dates (dried) ... ..	15 "	1d. "	1,000
Dried (except currants and raisins) or candied, and exported ... ..	5 "	10 % on market value	6,000

Although the rate of bonus on the several articles, is, as shewn above, fairly liberal, the bounties have not been availed of to any great extent, as will be seen from the following table, which gives particulars as to the quantity of the articles raised and the amounts paid as bounties in respect thereof for the four financial years which have elapsed since the operation of the Act :—

**PARTICULARS OF BOUNTIES PAID ON AGRICULTURAL PRODUCTS (OTHER THAN SUGAR), 1907-8 to 1910-11.**

Article.	Quantity produced on which Bounties were paid.				Amount paid as Bounties.			
	1907-8.	1908-9.	1909-10.	1910-11.	1907-8.	1908-9.	1909-10.	1910-11.
Cotton, ginned ... .. lbs.	662	21,865	24,994	53,173	£ 10	£ 32	£ 34	£ 91
Fibres—								
Flax and hemp... .. tons	...	32	28	28	...	126	120	123
Sisal hemp ... .. "	...	14	11	45	...	34	25	113
Oil materials supplied to an oil factory for the manufacture of oil—								
Cottonseed ... .. lbs.	...	36,491	45,610	96,312	...	12	10	22
Linseed (flax seed) ... cwt.	...	36	...	...	...	6	...	...
Coffee, raw, as prescribed lbs.	2,111	53,365	28,134	26,825	9	222	117	113
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed ... .. lbs.	...	14,538	33,093	10,902	...	121	276	90
Fruits—								
Dried (except currants and raisins) or candied, and exported ... .. lbs.	54,992	12,096	23,332	454,075	1,061	28	104	940

During the year 1910-11 the total amount paid in respect of cotton, sisal hemp, cottonseed, and coffee was claimed by the State of Queensland. South Australia collected £483, Tasmania £378, and Victoria £79 of the fruit bonus, while £83 of the bounty paid for tobacco leaf was paid to Queensland, the remaining £7 being earned in Victoria. The lastmentioned State also claimed the total amount paid for flax and hemp.

No bounties have yet been paid on New Zealand flax, jute, uncleaned rice or dates.

### § 18. Fertilisers.

1. **General.**—In the early days of settlement and cultivation in the Commonwealth, scientific cultivation was in a much less developed state than it is to-day. The early farmers were neither under the necessity, nor were they as a rule aware of the need, of supplying the constituents to the soil demanded by each class of crop. The widely-divergent character of the soils in the Commonwealth, their degeneration by repeated cropping, the limitations of climatic conditions, the difficulties of following any desired order of rotation of crops, all rendered it necessary to give attention to artificial manuring. The introduction of the modern seed-drill, acting also as a fertiliser distributor, has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made available. There is reason to believe that this feature will be even more strikingly characteristic of the future.

2. **Fertilisers Acts.**—In order to protect the interests of users of artificial manures legislation has been passed in each of the States, regulating the sale and preventing the adulteration of fertilisers. The following is a list of such Acts in force:—

New South Wales ...	The Fertilisers Act of 1904.
Victoria ... ..	The Artificial Manures Acts of 1904 and 1910.
Queensland ... ..	The Fertilisers Act of 1905.
South Australia ...	The Fertilisers Act of 1900; amended 1903.
Western Australia ...	The Fertilisers and Feeding Stuffs Act of 1904; amended 1905.
Tasmania ... ..	The Manures Adulteration Acts of 1893 and 1898.

As regards their main features these measures are practically identical. The words "fertiliser" and "manure," as used in these Acts, mean any substance containing nitrogen, phosphoric acid, or potash, manufactured, produced, or prepared in any manner for the purpose of fertilising the soil or supplying nutriment to plants, but do not include farm-yard or stable manure or similar articles in their natural or unmanufactured state. The Acts provide that every vendor of fertilisers must, within a stated period, forward to the Secretary of Agriculture, or corresponding officer, samples of the fertilisers on sale by him, together with the distinctive name or brands by which they are known, and the price at which he intends to sell during the year. On every bag, package, or bundle of fertiliser sold, or exposed for sale, he must attach a printed label shewing thereon:—

- (i.) The number of net pounds of fertiliser in such bag or parcel;
- (ii.) The figure or trade mark attached to the fertiliser and intended to identify it;
- (iii.) The proportion per centum of nitrogen, phosphoric acid, and potash contained therein.

In addition to the above the vendor must furnish every purchaser with an invoice certificate, signed by himself or his agent, stating his full name and place of business and the quality of the fertiliser sold.

Any officer or analyst appointed under the Acts may enter any manufactory, warehouse, store, vessel, wharf, railway station, conveyance, or other place where fertiliser is manufactured, stored, exposed for sale, or in course of delivery or transit, and demand and take samples of such fertiliser. Every sample so taken must be divided by such officer into three parts, and each marked, sealed, and fastened by him in the presence of the person in charge, and disposed of as follows:—

- (i.) One part to be taken by person in charge.
- (ii.) One part to be used for analysis.
- (iii.) One part to be retained by the officer for future comparison.

Every buyer of fertiliser is entitled to submit a sample to the analyst appointed under the Act, and receive a certificate of its analysis. If the analysis prove it to be under what it is represented to be, the vendor must pay the cost of analysis.

**3. Imports.**—The local production of artificial manures falls short of the existing demand, and large quantities are consequently imported.

The importation of fertilisers has increased over 250 per cent. during the ten years of Federation. The chief items, both as regards quantity and value, are those relating to phosphates, a fertiliser apparently very suitable for the growing of cereals in Australian soils. The greater quantity of the manufactured superphosphates is obtained from the United Kingdom, whence came over 70 per cent. of the total imported during 1910, while Japan contributed about 17½ per cent., and Germany nearly 6 per cent., the balance, representing 6½ per cent., being imported from Sweden, Belgium, and the Netherlands. Ocean Island, with about 78 per cent., is the principal contributor of rock phosphates, the balance being obtained from Christmas Island. Guano is imported chiefly from Ocean Island, one of the South Sea group, and in lesser quantities from Malden Island, while India has practically a monopoly of the bone-dust trade with the Commonwealth.

The increasing demand for artificial manures is shewn in the following table. It will be noticed that the quantity of rock phosphates imported during the last three years has shewn a marked increase over previous years. This was particularly large during 1910, when an increase of over 100 per cent. is shown over the quantity imported in the previous year. The figures for the manufactured superphosphates shew an increase of about 50 per cent. during that year.

## COMMONWEALTH IMPORTS OF FERTILISERS, 1906 to 1910.

Fertiliser.		1906.	1907.	1908.	1909.	1910.
Bonedust ... ..	Cwt.	80,625	93,798	74,657	71,959	12,740
" ... ..	£	20,094	24,103	18,088	17,632	3,294
Guano ... ..	Cwt.	818,580	606,630	606,660	468,315	788,304
" ... ..	£	103,953	75,130	84,961	56,723	89,961
Superphosphates ...	Cwt.	1,153,249	780,464	610,596	757,515	1,196,613
" ... ..	£	170,514	133,352	94,203	105,229	174,751
Rock Phosphates ...	Cwt.	547,079	769,630	1,267,665	1,006,030	2,112,127
" ... ..	£	70,782	103,609	183,817	143,246	294,212
Other ... ..	Cwt.	84,979	227,689	197,240	151,241	377,327
" ... ..	£	24,659	52,975	60,676	38,007	107,573
Total ... {	Cwt.	2,684,519	2,478,211	2,846,818	2,454,960	4,487,111
	£	390,002	389,169	441,745	360,837	669,791

4. **Exports.**—The subjoined table shews the exports of artificial manures for the years 1906 to 1910. Practically the whole of the fertiliser is manufactured locally, and is shipped mainly to New Zealand and the Pacific Islands:—

## COMMONWEALTH EXPORTS OF FERTILISERS, 1906 to 1910.

Fertiliser.		1906.	1907.	1908.	1909.	1910.
Bonedust ... ..	Cwt.	57,845	59,878	65,491	62,637	80,602
" ... ..	£	14,217	16,001	17,069	16,571	19,066
Guano ... ..	Cwt.	6,000	5,000	...	...	2,812
" ... ..	£	1,050	875	...	...	490
Superphosphates ...	Cwt.	110,530	194,943	250,236	235,939	260,261
" ... ..	£	22,110	41,041	47,418	44,041	51,061
Rock Phosphates ...	Cwt.	4,000	5,028	5,077	3,320	11,190
" ... ..	£	782	1,062	1,145	658	1,819
Soda Nitrate ... ..	Cwt.	...	1,980	429	3,579	6,215
" ... ..	£	...	1,168	222	2,075	2,844
Ammonia Sulphate ...	Cwt.	...	...	70,258	69,894	69,015
" ... ..	£	...	...	45,915	42,766	43,061
Other ... ..	Cwt.	109,849	148,816	130,524	177,189	229,841
" ... ..	£	34,571	50,813	28,565	33,880	48,989
Total ... {	Cwt.	288,224	415,645	512,015	552,558	650,936
	£	72,730	110,960	140,334	139,901	167,340

5. **Statistics of Use of Fertilisers.**—The statistics available in connection with the use of manures in the Commonwealth are those of New South Wales, Victoria, South Australia, and Western Australia. Particulars concerning the first-mentioned State are given hereunder:—

## FERTILISERS USED IN NEW SOUTH WALES, 1907-8 to 1910-11.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1907-8 ... ..	2,572,873	423,678	16.47	144,021	13,356
1908-9 ... ..	2,717,085	509,262	18.74	216,078	15,545
1909-10 ... ..	3,180,561	826,197	25.98	189,008	21,659
1910-11 ... ..	3,386,017	1,030,554	30.43	186,204	25,017

Particulars for Victoria for the past ten seasons are as follows:—

### FERTILISERS USED IN VICTORIA, 1901-2 to 1910-11.

Season.	Total Area of Crops.	Farmers Using Manure.	Area Manured.		Manure Used.	
			Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	No.	Acres.	%	Tons.	Tons.
1901-2 ...	2,965,681	11,439	556,777	18.77	153,611	23,535
1902-3 ...	3,246,568	18,537	1,099,686	33.87	206,676	36,630
1903-4 ...	3,389,069	19,921	1,205,443	35.57	207,817	41,639
1904-5 ...	3,321,785	20,167	1,521,946	45.82	190,903	45,940
1905-6 ...	3,219,962	21,586	1,791,537	55.64	210,507	54,674
1906-7 ...	3,303,586	23,072	1,985,148	60.09	205,906	60,871
1907-8 ...	3,232,523	23,733	2,018,079	62.43	232,394	62,337
1908-9 ...	3,461,761	24,437	2,053,987	59.33	235,492	64,715
1909-10 ...	3,658,535	26,690	2,407,331	65.80	197,446	77,579
1910-11 ...	3,952,070	27,845	2,714,854	68.69	203,884	86,316

The figures relating to the use of fertilisers in South Australia, for the only years for which they are available, are shewn in the table below:—

### FERTILISERS USED IN SOUTH AUSTRALIA, 1907-8 to 1910-11.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1907-8 ...	2,265,017	1,573,861	69.49	124,092	60,008
1908-9 ...	2,321,812	1,712,394	73.75	120,648	64,842
1909-10 ...	2,530,301	2,031,832	80.30	133,935	76,413
1910-11 ...	2,746,334	2,235,378	81.40	129,918	81,899

Corresponding particulars relative to Western Australia for the seasons 1904-5 to 1910-11 are given in the following table, and furnish interesting evidence of the rapid extension of the use of manures in that State:—

### FERTILISERS USED IN WESTERN AUSTRALIA, 1904-5 to 1910-11.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1904-5 ...	327,391	205,923	63.90	72,523	10,787
1905-6 ...	364,704	257,469	70.60	83,033	12,676
1906-7 ...	460,825	340,401	73.87	81,653	16,127
1907-8 ...	493,837	391,146	79.21	73,809	17,273
1908-9 ...	585,339	493,545	84.32	61,834	21,358
1909-10 ...	722,086	608,870	84.32	67,263	24,654
1910-11 ...	855,024	773,561	90.47	62,229	33,194



A marked increase in the proportion of cropped land treated with manure is in evidence in all of the States for which returns are available. Thus in New South Wales the area of manured land represented in 1907-8 only  $16\frac{1}{2}$  per cent. of the area under crop, as against  $30\frac{1}{2}$  per cent. in 1910-11. Similarly in Victoria the percentage increased from  $18\frac{3}{4}$  per cent. in 1901-2 to over  $68\frac{1}{2}$  per cent. in 1910-11, in South Australia from  $69\frac{1}{2}$  per cent. in 1907-8 to  $81\frac{1}{2}$  per cent. in 1910-11, and in Western Australia from 64 per cent. in 1904-5 to  $90\frac{1}{2}$  per cent. in 1910-11.

**6. Local Production of Fertilisers.**—Statistics relative to the local production of fertilisers are necessarily very incomplete, and detailed returns for fertiliser factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in the Commonwealth during the year 1910 was 78, made up as follows:—New South Wales, 20; Victoria, 24; Queensland, 13; South Australia, 12; Western Australia, 6; and Tasmania, 3. If, however, approximately complete returns of the quantities of fertilisers used in the various States could be given, a comparison with the importations would give valuable information, but, as already mentioned, such particulars are only available for four of the States, and even then do not furnish the whole of the information necessary.

**7. Benefits Derived from the Use of Fertilisers.**—There is little doubt that the increased and increasing use throughout the Commonwealth of fertilisers, natural and artificial, combined with the greater attention being devoted to fallowing and to the combination of sheep-farming with agriculture, is having the effect of improving the prospects of those dependent for a livelihood on the products of the soil. Reference has previously been made to the loss to the soil of phosphoric acid which the Commonwealth export of wheat and its milled products involves, and the necessity which thus arises for returning this ingredient in some form. Similarly, other staple products exported impose their respective tolls upon the soil of the Commonwealth, and the increased use of fertilisers furnishes evidence that producers are alive to the necessity for making good the deficiency so arising.

## § 19. Ensilage.

**1. Value to Stockowners.**—The use of ensilage as a substitute for green fodder during periods of drought or spells of dry weather, or for winter use, is less extensive in Australia than the circumstances would appear to warrant. There is, however, a growing disposition on the part of dairy farmers to make silos on their holdings, as they find that dairy cattle eat ensilage greedily, and that by its means the output of milk, both in regard to quantity and quality, may be kept up long after the supply of ordinary green food is exhausted. Sheepbreeders are also recognising the fact that during protracted periods of dry weather the silo enables them to keep their stock in good condition, and that lambing can take place satisfactorily. Ensilage thus obviates the expense of travelling or trucking sheep for hundreds of miles to get beyond the drought area, or the equally costly and even ruinous alternative of providing chaff for food at high prices and costly freight. In the rearing of lambs for the London market, ensilage appears to be destined to play an important part, as the lambs thrive upon it much better than upon dry food. By the judicious economising of the surplus growth of green food with the use of the silo, farmers and squatters can carry more stock on their holdings than they otherwise would be justified in doing. Not only is the great waste of superabundant food thus avoided, but it becomes possible to change into a succulent and nutritious

food much growth that in any other state would not be eaten by stock. Thus such vegetation as marsh mallows, thistles, weeds of all sorts, and even the swamp reed *Arundo phragmites*, which grows in great quantities in lagoons, billabongs, and swamps, are all eaten with avidity when offered to stock in the form of ensilage. The pit and stack silos are rapidly being superseded by those built of red gum and hardwood or concrete. This is found to a great extent to obviate the loss sustained by mould, at the same time reducing the risk of fire. The silos vary in capacity from forty to 130 tons. A portable silo made of iron which has been devised, is made in sections of such size and weight as to admit of ready handling. These silos can be increased in diameter or height by the addition of further sections.

**2. Government Assistance in the Production of Ensilage.**—The Government of Victoria, recognising the fact that defective methods of making ensilage have often been adopted, leading to partial or total failure, is making special efforts to educate the farming community in this respect, so that mistakes may be avoided and the conditions essential for the production of good ensilage may be better appreciated. These conditions vary with the climate and with the locality.

**3. Quantity Made.**—Particulars concerning the number of silos and the quantity of ensilage made in the several States of the Commonwealth in the seasons 1906-7 to 1910-11 are furnished in the table given hereunder:—

COMMONWEALTH ENSILAGE-MAKING, 1906-7 to 1910-11.

State.	1906-7.		1907-8.		1908-9.		1909-10.		1910-11.	
	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
New South Wales ...	...	11,849	212	12,856	300	27,468	364	34,847	258	29,616
Victoria ...	210	10,581	203	11,031	392	18,205	518	27,280	460	25,969
Queensland ...	44	3,201	63	2,949	59	4,654	79	4,517	97	5,804
South Australia ...	†	3,364	56	2,088	67	2,017	81	2,244	68	1,530
Western Australia ...	23	525	37	1,169	51	1,171	28	770	14	414
Tasmania ...	†	†	11	512	11	512	13	686	21	1,073
Commonwealth ...	...	129,520	582	30,605	880	54,027	1,083	70,344	918	64,406

\* No. of holdings on which ensilage was made.

† Figures not available.

‡ Exclusive of Tasmania.

Since the drought of 1902-3 greater attention has been paid to ensilage than was previously the case, and during the four seasons ended 1909-10 a continuous and fairly rapid increase was in evidence in all the States, both in the number of holdings on which ensilage was made, and in the quantity produced. The season for 1910-11 shews a falling-off in all the States, with the exception of Queensland and Tasmania; in these two States there was an increase both as regards the number of holdings and quantity made. The reduction in the States indicated cannot be accepted as an indication of a lessening of appreciation of the benefits of ensilage, but rather of the fact that stocks had not been drawn upon to any great extent during the previous two seasons.

## § 20. Agricultural Colleges and Experimental Farms.

1. **Introduction.**—It has been thought preferable to refer to what may be called the effort in the direction of agricultural education in this section rather than under the heading of education.

The virgin soil of a new country rendered attention to scientific methods of farming less necessary in the earlier days of Australian colonisation than at the present time, and it may also be said that the knowledge of scientific farming was then but little developed. In many parts of Australia, moreover, the regular rotation of crops, of vast importance to all agricultural countries, would appear hardly possible, owing to the peculiar climatic conditions. These conditions may, however, be utilised or made less adverse, by a more skilful tillage of the soil, and the restoring to it or adding to it such chemical constituents as may be necessary for particular crops. The fostering of industries, other than those pertaining merely to the production of cereals, is also becoming a matter of consequence, and considerable extensions of knowledge have been made in the past few years in respect to the co-ordination of other industries with agricultural industry. In most of the States agricultural colleges and experimental farms have been established with a view to promoting agriculture and to establishing improved and more scientific systems of stock-breeding and dairying. In these colleges and in some of the farms provision is made for the accommodation of pupils, to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilisers are made, manures are tested, and elementary veterinary science, etc., is taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of shewing that it is practicable to produce certain crops in a given place, but also to shew how it is possible to make farming pay best in that locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder, in cheese and butter making, in the management, breeding, and preparation for the market of live stock, in the eradication of pests and weeds, and in carpenters', blacksmiths' and other trades.

Travelling expert lecturers are sent to the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins on matters of importance at special seasons. Lectures are given on agricultural, pastoral, horticultural, and viticultural subjects, according as they have bearing on the industries of the district in which they are given, and practical demonstrations are frequently held with a view of obtaining the best results. Seeds of cereals, potatoes, and fodder plants are distributed throughout the several States for experimental purposes, on the understanding that result reports will be furnished to the department from which the seed was sent. The object of this is to ascertain the varieties of seed best adapted to the soil in the different localities. Attention is also paid to the proper supervision of exports of produce in order to ensure their being placed on the home markets in the best possible condition. In some of the States agricultural instruction is given at technical schools, while experimental elementary agriculture—practically a form of nature study—is taught at many of the primary schools. Courses for the instruction of school-teachers during the holiday recesses have been established at some of the agricultural colleges.

(i.) *Australian Bureau of Agriculture.* In July, 1909, a Bill to establish a Bureau of Agriculture was introduced into the House of Representatives. Under this Bill it was proposed that the Bureau be charged with any of the following functions:—(a) the acquisition and diffusion among the people of the Commonwealth of information connected with agriculture, dairying, horticulture, viticulture, live stock and forestry; (b) the collection, propagation and distribution of new and valuable seeds and plants; (c) the carrying out of experiments and investigations; (d) the investigation of pests or

diseases affecting plants or live stock, and the means for preventing their spread or effecting their eradication; (e) the publication of reports of the experiments of experimental farms; (f) the publication of reports and bulletins dealing with any matter of importance in regard to production in Australia, and (g) such other functions as may be prescribed. It was also proposed that arrangements be made with the Government of any State in respect to the carrying out of experiments and investigations, the supply and distribution of information, the exchange and distribution of seeds and plants; and any matters conducing to the development in Australia of agricultural, pastoral, dairying, horticultural and viticultural industries and forestry. Each year a report was to be furnished to Parliament shewing the condition of the various industries and forestry in Australia and the nature of the work done by the Bureau during the preceding year. This Bill, however, lapsed, and further legislative action has not since been taken.

(ii.) *Particulars of Agricultural Colleges and Experimental Farms.* In the table given below particulars of agricultural colleges and experimental farms in the several States of the Commonwealth in 1910-11 are shewn. Tasmania is the only State in which such colleges or farms are not established.

**PARTICULARS OF AGRICULTURAL COLLEGES AND EXPERIMENTAL FARMS IN THE  
COMMONWEALTH, 1910-11.**

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	C'wealth
Number of colleges ...	1	2	1	1	...	5
Number of experimental farms ...	13	7	7	6	4	37
Total number of students ...	244	192	61	57	8	562
Total number of hands employed	180	120	62	34	20	416
Area under cereals and hay ... Acres	1,856	1,316	516	1,403	899	5,990
Area under fruit trees and vines... "	355	148	72	83	17	675
Area under all other crops ... "	1,116	437	244	226	296	2,319
Total area under crop ...	3,327	1,901	832	1,712	1,212	8,984
Area of arable land ...	4,785	4,499	1,328	3,821	3,041	17,474
Total area of farms ...	17,240	9,191	13,206	13,379	7,005	60,021
Number of Live Stock—						
Horses ... No.	374	172	200	150	62	958
Cattle ...	950	460	835	100	210	2,555
Sheep ...	3,132	3,695	1,133	2,658	1,049	11,667
Pigs ...	647	316	189	160	258	1,570
Value of plant and machinery ... £	10,270	9,097	7,480	6,745	2,605	36,197
Value of produce for year ... £	20,005	11,330	5,428	6,609	3,882	47,254

2. **New South Wales.**—In order to meet the demand for agricultural training, and or the purpose of conducting experiments in various branches of agriculture and of disseminating agricultural knowledge, an agricultural college and farm and thirteen experimental farms are now established by the New South Wales Government. Theoretical instruction in agriculture, with practical illustrations, forms part of the curriculum of the Sydney Technical College. At the Hurlstone Continuation College there is a special course in both theoretical and practical agriculture for teachers. Instruction in "nature knowledge" is given in the State primary schools, many of which have their own experimental plots. As a means of further encouraging the study of agriculture the Department of Public Instruction has a travelling inspector in agriculture, whose duty it is to visit the country and metropolitan schools, giving lectures on the value, necessity, and advantages of agricultural knowledge, and giving practical demonstrations wherever practicable.

(i.) *The Hawkesbury Agricultural College*, situated near the town of Richmond, on the Hawkesbury River, about thirty-eight miles from Sydney, is under the control of the Agricultural Department and provides accommodation for about 250 students. Attached to the college is a farm of 3551 acres, of which 778 acres were under crop in the season 1910-11.

(a) *The course of instruction* comprises the principles of agriculture; the breeding, rearing, feeding, and management of live stock; agricultural chemistry, botany, vegetable pathology, and entomology; veterinary science and practice; bacteriology; meteorology; agricultural mechanics; elements of surveying and farm book-keeping; all kinds of practical farm work, including the use of farm implements and machinery; dairying, carpentry, saddlery, blacksmithing, and elementary agricultural engineering; the management of poultry and bees and all branches of orchard and garden work. The course extends over two years, and is divided into four sessions. At the end of the course students may undergo examination for the purpose of obtaining the college diploma.

(b) *Experimental Work*. In addition to the education of the students, extensive experimental operations are carried on at the farm for the general benefit of agriculturists. Large numbers of farmers visit the institution in quest of information. During the winter vacation arrangements are made for a winter school for farmers. This school has been in operation for five years. The course extends over one month.

(ii.) *Experimental Farms, Orchards, and Vineyards*. Experimental farms have been established at Wagga, Bathurst, Grafton, Glen Innes, Cowra, Wollongbar, Dural, and Nyngan. There are irrigation farms at Pera, and Yanco, and a dairy stud farm at Berry, while viticultural stations have been established at Howlong and Raymond Terrace. At the farms at Wagga, Bathurst, Wollongbar, and Berry, accommodation is provided for students. The educational work undertaken at the four farms where students are received is more practical than academic. Scientific lectures are given as far as possible, and the students, at the end of the full course, undergo an examination for the purpose of obtaining the farm certificate. The fees payable are not large, amounting, as a rule, to about £25 per annum for residential students. With regard to the farm operations, the objects of each farm are to demonstrate the most economic and effective systems of producing and harvesting crops; to carry out experiments to determine the suitability or otherwise of crops, not only for the district where the farm is situated but for other districts having similar climate and soils; and to carry out scientific agricultural experiments generally.

(iii.) *Particulars of Agricultural College and Experimental Farms*. The following table shows the number of students at the Hawkesbury College and at the four experimental farms at which students are received for each year from 1906 to 1910 inclusive:—

**NEW SOUTH WALES.—NUMBER OF STUDENTS AT GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS, 1906 to 1910.**

Name.	1906.	1907.	1908	1909.	1910.
Hawkesbury Agricultural College ...	201	230	190	188	154
Wagga Farm ...	40	63	52	49	42
Bathurst Farm ...	25	23	25	32	33
Wollongbar Farm...	9	18	7	11	12
Berry Dairy Stud Farm ...	7	11	2	...	...
Total ...	282	345	276	280	241

At the Wagga farm a specialty is made of growing seed wheats and fruits for drying, and of breeding dairy stock and swine. The Bathurst farm is devoted to the cross-breeding of sheep, fruit-growing, cereal culture, and general mixed farming. At Coolabah experiments in the dry districts have been carried on, while at Wollongbar experiments have been made on a large scale with grasses for the grazing of dairy cattle, and steps have been taken to assist the dairying industry in the surrounding districts.

The following table gives particulars of the Hawkesbury College and of thirteen experimental farms for the year ended the 31st March, 1911.

Coolabah and Moree farms were closed in May, 1910, the operations of the former being transferred to Nyngan; a farm was opened at Coonamble in March, 1911.

**NEW SOUTH WALES. — PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS AT THE 31st MARCH, 1911.**

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	Number of Hands Employ'd	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Hawkesbury	3,551	778	444	40	294	23	1,852	5,750
Wagga ...	3,228	939	569	95	275	21	1,700	6,845
Bathurst ...	680	461	157	44	260	44	1,900	2,000
Wollongbar	262	82	21	.1	60	12	300	202
Berry <sup>1</sup> ...	323	69	45	...	24	5	235	355
Howlong <sup>2</sup> ...	224	46	9	37	...	8	190	232
Grafton ...	1,000	165	140	...	25	8	580	2,000
Glen Innes ...	1,050	140	111	19	10	19	503	481
Cowra ...	996	286	142	2	142	14	1,250	1,132
Pera <sup>3</sup> ...	556	67	22	45	...	3	400	567
Raym'd Ter. <sup>2</sup>	610	25	...	25	...	6	10	115
Yanco <sup>3</sup> ...	323	79	56	20	3	7	750	293
Nyngan ...	4,400	160	140	...	20	4	500	...
Dural ...	37	30	...	27	3	6	100	3

1. Dairy stud farm.

2. Viticultural station.

3. Irrigation farm.

(iv.) *Other Forms of Agricultural Instruction.* Agricultural education at the Technical College at Sydney includes the following studies:—The character and prospects of Australian agriculture; climate and rainfall; selection of land, clearing, fencing, building and draining; irrigation and water storage; the cultivation of crops; manures; live stock; dairying; sheep and wool; farm and dairy chemistry; the treatment of fungus and insect pests; fruit-growing and preserving; vine-growing and wine-making; pigs, poultry and bee-keeping; and horticulture and home-gardening. Elementary agriculture forms the first year's course, and advanced agriculture is dealt with during the second year. With the object of giving lectures and demonstrations on various subjects, the scientific and expert staff of the agricultural laboratories in Sydney as well as those attached to the college and farm staffs are from time to time placed at the disposal of the farming community, and are constantly in demand by agricultural societies, farmers' and settlers' associations, and other similar bodies. The publication of the *Agricultural Gazette* is a valuable means of imparting knowledge on agricultural matters. Seeds grown at the experimental farms are distributed from a central dépôt in Sydney for trial purposes among the farmers, and are also available to State school teachers for use in connection with the experimental plots which are now attached to many of the primary schools throughout the State. The only condition in the granting of such samples is that the recipients shall in due course forward a report of their experiments to the Agricultural Department.

3. **Victoria.**—In 1884, the Agricultural Colleges Act, passed to make provision for the establishment of agricultural colleges and experimental farms in Victoria, provided for the permanent reservation from sale of 150,000 acres of Crown lands by way of endowment of agricultural colleges and experimental farms, which, together with other lands reserved as sites for such institutions prior to the passing of the Act, are vested in three trustees appointed by the Governor. Provision was made for the appointment of a Council of Agricultural Education, consisting of eleven members, five of whom are elected by the members of the Agricultural Societies of the State, five are nominated by the Governor, whilst the Secretary for Agriculture is also a member of the Council and its Treasurer. Two agricultural colleges and seven experimental farms, orchards and vineyards are now in existence in different parts of the State. There are five Agricultural High Schools under the control of the Education Department, while elementary experimental agriculture is taught at many of the State primary schools. Instruction in agriculture is also given at the technical schools at Melbourne and Bairnsdale.

(i.) *Agricultural Colleges.* The two colleges are situated respectively (a) at Dookie, in the Goulburn Valley district, and (b) at Longerenong, in the Wimmera district.

(a) *The Dookie Agricultural College*, with its farm of 5118 acres, is situated in a rich agricultural country, eminently suited for farming, grazing, viticulture, and horticulture. The college buildings were erected during 1886, and since then numerous additions have been made, so that at the present time accommodation is provided for over 100 students, and provision will shortly be made to accommodate more. The farm is equipped with modern dairy and cowbyres, piggeries, poultry plant, cellars, etc., also large stables and stallion boxes, shearing shed, slaughterhouse, mechanics' and carpenters' shops, silos, barn, sheds, cattle and sheep yards, steam and oil engines, and numerous modern implements of agriculture. Half the students' time is devoted to practical work on the farm, and half to scientific, theoretical, and other work. On the farm the student is taught to manage live stock, handle implements and machinery, work the separator, drive engines, prune vines and trees, break-in horses, shoe horses, mend a break, and erect buildings. At the college instruction is given in determining the fertility of soils, the effects of manuring, the importance of drainage, the improvement of stock and crops, irrigation, and the treatment and eradication of diseases in plants and animals. Considerable attention is paid to experimental work in connection with cereals. The rearing of new varieties of wheat, suitable for the different parts of the State of Victoria, has special attention paid to it. Manurial tests are carried out each year and the results published for the benefit of the farmers. The stock comprises nearly ninety horses, as well as good herds and flocks of pedigree cattle, sheep, pigs, and poultry. The annual charge made to residential students is £32 5s. per head. The number of students during 1910 was 107.

(b) *The Longerenong Agricultural College*, reopened in 1905, can accommodate forty students, and thirty-nine were on the rolls during last year. The farm has an area of 2386 acres, and is particularly adapted for demonstrating what can be done in farming with irrigation, water being supplied by one of the channels of the Western Wimmera Irrigation Trust. Including fallow land, about 800 acres are under cultivation each season; the orchard and vineyard cover an area of about thirty acres. In addition to a number of well-bred horses and cattle, there is a small flock of pedigree sheep. Lamb-raising is one of the principal industries. The course may be taken by either resident or non-resident students, the former doing both class and farm work, while the latter attend for class work only on alternate

days. The syllabus of instruction includes the principles and practice of agriculture, agricultural chemistry, agricultural physics and mechanics, botany, entomology, geology, surveying, bookkeeping, mathematics, and English. The fees for resident students amount to £18 5s. per annum, and for non-resident students to £5 per annum.

(ii.) *Agricultural High Schools and Technical Colleges.* At the end of the year 1911 there were in operation, seven agricultural high schools controlled by the Education Department, viz., Warrnambool, Sale, Shepparton, Wangaratta, Ballarat, Warragul, and Mansfield. Similar institutions are to be established in the near future at Mildura and Leongatha, the sites having already been acquired. The direct aims are to give to boys such an education as will direct their attention specially towards the land as a means of gaining a livelihood; to promote agriculture as an occupation and a profession; to provide a central institution for the dissemination of agricultural information by evening lectures, conferences, and literature; to superintend the Government experimental plots; to record and interpret their results; and to provide a summer school in agriculture for primary school teachers. The course of instruction comprises agricultural science, climatology, physics, chemistry, geography, drawing, English, mathematics, and farm practice. At the Working Men's College at Melbourne lectures are given on agricultural chemistry, wool-classing, poultry-breeding, etc., and at the School of Mines at Bairnsdale a complete course in theoretical and practical agriculture is given, extending over a period of two years. Agricultural courses are also held at the Ballarat School of Mines and at the Gordon College, Geelong.

(iii.) *Experimental Farms.* Experimental farms are now in existence at Rutherglen, Whitfield, Wyuna, Burnley, Rosedale, and Marlo (Gippsland), demonstrating different methods of cultivation, manuring, stock-breeding, the cultivation of economic plants, the improvement of varieties of cereals by selection and cross fertilisation, and the testing of fodder plants. Six demonstration orchards have been established to shew the effect of proper cultivation and pruning of fruit trees in various districts and the suitability of the trees for the district. At Burnley Horticultural Gardens students are trained in horticulture. Areas have been planted at Rutherglen and Wahgunyah with phylloxera-resistant vines for distribution to vignerons to enable them to reconstitute their vineyards. In several districts experimental plots are conducted by the local agricultural society.

(iv.) *Other Forms of Agricultural Instruction.* The *Journal of the Department of Agriculture*, published monthly, deals with various matters relating to agriculture, and is a valuable means of disseminating information. Since the establishment of butter factories throughout Victoria, a travelling dairy formerly utilised has been discontinued. Demonstrations in cheese-making are, however, still given by an expert, while other experts also visit the factories and supply information and instruction. Practical lessons are also given by experts in fruit-preserving, drying, and candying, also in flax manufacture, cider-making, poultry-dressing, and the preparation of poultry for export. In addition to these lectures a system of short-course classes in agriculture has been established. These classes are held at various centres, and lectures are given on the principles of agriculture, the care of farm stock, sheep-breeding and management, dairy-farming, agricultural engineering, and orchard and garden work. In many of the State Schools of Victoria elementary agriculture is taught. In connection with these schools there are experimental plots varying in area from half an acre to rather less than a quarter of an acre. Experiments are conducted to shew the benefits of cultivation, drainage, and rotation of crops, to ascertain fodder and other crops suitable for the locality, and to test manures. In some of the schools milk-testing is taught, and the economic native woods, common weeds, and insects are dealt with. Agricultural societies have been



formed in many country towns. They arrange lectures, competitions, and form experimental plots, etc., and receive subsidies from the State for such purposes. A Chair of Agriculture was established in 1911 and there is now a course of agriculture at the Melbourne University by which students can attain the degrees of the Diploma of Agriculture, and Bachelor of Agricultural Science.

The Bachelor of Agricultural Science course extends over a period of four years, during which time candidates have to attend lectures, laboratory and field work as prescribed by the Faculty of Agriculture in the following subjects, and pass examinations therein:—Chemistry (including agricultural), agricultural zoology (including entomology and botany), natural philosophy, comparative anatomy and physiology of domestic animals, physical geology, economic bacteriology and pathology of the infective diseases. During the fourth year, candidates have to perform at Dookie Agricultural College, or some other institution recognised for the purpose by the Council of the University, such work as may be prescribed by the Faculty in the theory and practice of agriculture and agricultural engineering, and to satisfy the Faculty that they have passed a satisfactory examination therein. After completion of the four years' course, candidates have to spend not less than four months in field work in places devoted to special branches of agricultural work. When candidates have fulfilled these conditions and have also passed an examination in book-keeping, they may then be admitted to the Degree of Bachelor of Agricultural Science. During the first year there are exhibitions open in chemistry, biology and natural philosophy. An exhibition of twenty pounds may be awarded to the candidate who at the second year honour examination stands highest in the subjects of the year, and at the honour examination in the third year the Wrixon exhibition is open under similar conditions.

Candidates for the Diploma of Agriculture have to pass three examinations and complete three years. During the first and second year they have to attend lectures, laboratory and field work as prescribed, and pass examinations therein. The subjects for the first year are chemistry (including agricultural), and biology with laboratory work, agricultural zoology and entomology, botany and physical geology. The second year's subjects are economic bacteriology and pathology of the infective diseases, comparative anatomy and physiology of domestic animals, agricultural bio-chemistry and agricultural botany (including micology). Prior to entering on the third year, candidates must, at some examination approved by the Faculty, have passed in elementary mathematics, including the use of logarithms and elementary plane trigonometry; they are then required to perform at the Dookie Agricultural college or other recognised institution such work as may be prescribed by the Faculty in the theory and practice of agriculture, and satisfy the Faculty that they have passed a satisfactory examination therein. Having complied with the foregoing conditions, and also passed an examination in book-keeping and land surveying, they may be admitted to the Diploma of Agriculture.

Candidates having obtained the Diploma of Agriculture may, at any time, proceed to the Degree of Bachelor of Agricultural Science by matriculating in the University and by passing in the order prescribed in such subjects as together with those that have already been passed will complete the degree, provided that the conditions relating to attendance at lectures, and the performance of the required laboratory, field and practical work be complied with.

(v.) *Particulars of Agricultural Colleges and Experimental Farms.* The table given hereunder furnishes particulars relating to the agricultural colleges of Dookie and Longerenong, and the seven experimental farms:—

**VICTORIA.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGES AND  
EXPERIMENTAL FARMS FOR THE YEAR 1910-11.**

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees & Vines.	Area under all other Crops.	Number of Hands Em- ployed.	Value of Plant and Ma- chinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Dookie ...	5,118	906	658	72	176	45	4,750	6,172
Longerenong	2,386	427	353	27	47	15	1,090	2,838
Rutherglen	913	213	143	32	38	31	834	1,752
Whitfield ...	113	51	30	2	19	3	250	428
Wyuna*	540	228	95	1	132	12	1,622	...
Heytesbury*†	33	27	10	...	17	2	80	...
Burnley ...	32	14	...	13	1	8	250	100
Rosedale ...	21	11	7	...	4	2	170	...
Marlo ...	35	24	20	1	3	1	60	40

\* Figures for 1909-10; those for 1910-11 not available. † Closed during 1911.

4. **Queensland.**—Organised experimental agriculture in Queensland dates from the establishment of the Department of Agriculture and Stock, but such work as has been done in connection with stock-breeding, other than that carried on by private individuals, has been of later birth, and has been confined to dairy stock and draught horses. Agriculture in Queensland in the early nineties was upon the well-defined lines of the other States, so that the knowledge to be gained as to what could be profitably adapted to Queensland, with its varied climate and rainfall, covered a wide field. Instructors were appointed conversant with the different lines of agriculture, of which grain cultivation, dairying, fruit-growing, tobacco cultivation, and tropical agriculture, such as sugar, rubber, and spices, are the most important. This has been followed by the establishment of an agricultural college, of farms in the temperate parts of the State, and of nurseries in the tropical parts. With wheaten grain a system of experiments has been carried out for some years with the distinctive object of evolving a type of wheat adapted for Queensland, and as far as possible resistant to the attacks of rust. In dairying, a commencement was made by despatching to the different farming centres properly equipped travelling dairies with the latest appliances. The export of Queensland dairy produce has arisen through this effort. No travelling dairies are, however, now employed. A fruit farm has been established, at which fruits suitable for or likely to adapt themselves to the Queensland climate and conditions have been experimented with during a series of years. To cope with the insect and fungus pests to which such fruits are peculiarly susceptible, careful inspection is made of fruits in the markets and for export, and every effort is put forth to prevent the introduction of fresh diseases and to exterminate those which are already within the State.

(i.) *Gatton Agricultural College.* In 1897 the Queensland Government established an agricultural college at Gatton, about fifty-eight miles west of Brisbane, with an associated farm of 1692 acres. Accommodation is provided for sixty residential students. Instruction is afforded in various branches of practical farming and theoretical agriculture, the practical feature being regarded as the more important. Elementary science and physics, dairying, gardening, elementary chemistry, veterinary science, horticulture, stock-breeding, elementary bacteriology, and agricultural chemistry are also taught. A dairy herd of the best known and favoured breeds has been established at the college, whence the young stock of pure breed have been distributed throughout the State. A course for the instruction of school teachers during the summer recess has been established at the college by the Education Department, and the knowledge thus acquired is imparted by the teachers, not only to the school children, but also to the farmers and dairymen. On the 31st December, 1910, there were forty-six students on the books of the college.

(ii.) *Experimental Farms and Technical Colleges.*

(a) *Experimental Farms* are carried on by the Government at Westbrook (near Toowoomba), Gindie, Biggenden, Hermitage (near Warwick), Warren, and Roma. At the Hermitage farm arrangements were made during the year 1906, whereby instruction in general farm work is given to a number of boys who, from circumstances, are unable to receive the advantages of the college course, and this system has now been applied to the farm at Biggenden. The pupils are apprenticed for a term of three years and are instructed in experimental and acclimatisation work, stock-breeding, hybridising, orchard work, etc. These youths are paid nothing for the first twelve months, £12 for the second, and £24 for the third. A state nursery has been established at Kamerunga, near Cairns, and a sugar experimental station at Mackay, but the State tobacco farm at Texas was relinquished during 1906.

(b) *Technical Colleges.* At the technical colleges established in various parts of the State instruction is given in certain agricultural subjects. Thus, at Brisbane, Ipswich, and Maryborough, botany, milk and cream testing, fruit preserving and pickling are dealt with, and at Brisbane wool-classing also. At Bundaberg, Gympie, Rockhampton, South Brisbane, and Toowoomba milk and cream testing is taught, whilst instruction is given in dairy-farming at Warwick.

(iii.) *Other Forms of Agricultural Instruction.* Free lectures are from time to time given at different centres by the Agricultural Department's technical instructors on all agricultural, horticultural, and pastoral subjects. A monthly *Agricultural Journal* is issued, in addition to pamphlets on special subjects. Seeds which are new to the country are distributed free. In the primary schools instruction is given in nature study and in economic gardening, prizes being awarded both for practical and theoretical work.

(iv.) *Particulars of Agricultural College and Experimental Farms.* The table given below contains particulars of the Gatton Agricultural College and the seven experimental farms. Figures relating to the technical colleges are not available:—

**QUEENSLAND.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGE AND  
EXPERIMENTAL FARMS FOR THE YEAR 1910.**

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	Number of Hands Employ'd	Value of Plant and Ma- chinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Gatton ...	1,692	263	169	6	88	30	1,400	2,846
Biggenden ...	211	30	6	4	20	1	450	200
Roma ...	791	82	55	13	14	7	2,500	262
Gindie ...	8,611	44	25	4	15	4	1,000	250
Westbrook ...	300	82	26	37	19	5	500	600
Warren ...	1,128	43	29	5	9	5	800	370
Kamerunga	40	22	...	3	19	6	200	200
Hermitage ...	433	266	206	...	60	4	630	700

5. *South Australia.*—To this State belongs the honour of starting the first experimental farm in the Commonwealth. As far back as the year 1879 a resolution was passed by the local Parliament in favour of the establishment of a School of Agriculture, with an experimental farm, under the charge of a professor of agriculture. Active operations in this connection were commenced in 1882, when the first series of plots of wheat were sown at Roseworthy. Experimental work, chiefly directed towards improving

the wheat yield, has been developed along three main lines, viz.: (a) The improvement of varieties of wheat, (b) the improvement of methods of cultivation, and (c) the use of manures. The Central Agricultural Bureau, established at Adelaide under the control of an Advisory Board, has an extensive membership distributed throughout the agricultural districts of the State. It assists farmers by the dissemination of knowledge; by helping to introduce new economic plants; by improving the breed of stock; and it acts as a means of keeping the Agricultural Department in touch with the producers. The branches of the bureau hold meetings at regular intervals in their several districts, ideas and methods as regards practical subjects are interchanged, and discussions are held on matters of general interest to agriculturists.

(i.) *The Roseworthy Agricultural College.* The Roseworthy College, situated seven miles from Gawler, and affording accommodation for about fifty resident pupils—who must be at least sixteen years of age on admission—has two main objects, viz.: (a) To train young men for the practice of agriculture, horticulture, and viticulture, and (b) to conduct experiments with a view to the advancement of the rural industries in South Australia. The attached farm is 1890 acres in extent. The course extends over a period of three years, the fees for residential students being £30 per annum. The curriculum includes both scientific and technical subjects, viz., chemistry, physics, anatomy, physiology, botany and entomology; agriculture, viticulture, œnology, fruit culture, veterinary science, dairying, book-keeping, surveying, wool-classing, and general rural economy. Fifty students were on the roll during 1910.

(ii.) *Experimental Farms.* During the year 1905-6 three experimental farms were handed over to the Agricultural Department, namely, the homestead block at Kybybolite of 1040 (now 2256) acres, 59 acres of reclaimed swamp at Murray Bridge, and 110 acres at Parafield. A similar farm subsequently established at Loxton is carried on in conjunction with one at Veitch's Well. During 1910 farms were established at Shannon and Minburra. On these, experiments are carried on with regard to the growing of different varieties of wheat, oats, and barley, both for grain and for hay crops, and also with regard to the growing of root and fodder crops. Investigations cover the manuring of crops, different methods of cultivation, rotation of crops, irrigation, the hybridisation and selection of cereals, feeding of animals, fruit-growing, and wine-making.

(iii.) *Government Dairy Farm.* Towards the close of 1908 the Government acquired a property of 1600 acres of good agricultural land at Turretfield, nine miles from Gawler, with the object of converting it into a model dairy farm. About 500 acres were cultivated during 1909, the produce of which is to be set aside mainly for ensilage purposes. Special provision has been made for the conservation of fodder, and large silos have been erected for the storage of the green feed. Owing to the large demand for seed wheat, an extension of the Parafield scheme of experimental work was necessary, and 350 acres of the Turretfield Dairy Farm were reserved by the Agricultural Department for seed plots; 100 acres were sown for 1910 season with the most approved types of wheat. There were about sixty cows in milk during the latter part of 1910, particular care being taken to obtain the best strains for milking purposes. A feature of the farm is its piggery, and baconers are sent to the Adelaide market with advantageous results. Cheese and pasteurised cream are also marketed profitably.

(iv.) *Other Forms of Agricultural Instruction.* Lectures are given by experts of the Agricultural Department under arrangement with the School of Mines at Adelaide and at country branches of that institution, while practical demonstrations are also given by the horticultural instructor. No instruction is given by travelling dairies, but the dairy instructor visits districts as arranged and gives instruction and advice on all matters pertaining to dairying. Lectures and practical demonstrations are given by experts all over the State, principally under the auspices of the Agricultural Bureau or local committees. Though no systematic scheme for agricultural teaching in the primary schools

exists, numbers of individual teachers have taken up experimental elementary agriculture—practically a form of nature study—with satisfactory results. Seed of special varieties of wheat is from time to time distributed gratis to applicants; also seed of barley and oats, and of fodder plants of a special character, likely to suit prevailing conditions. The *Journal of the Department of Agriculture* is issued monthly and special bulletins and pamphlets regarding cultivation, manuring, diseases of stock, etc., are published from time to time. It is proposed to establish a training school of agriculture in the near future.

(v.) *Particulars of Agricultural College and Experimental Farms.* The subjoined table gives details of the several farms in the State during 1910-11 :—

**SOUTH AUSTRALIA.—PARTICULARS OF AGRICULTURAL COLLEGE AND  
EXPERIMENTAL FARMS FOR THE YEAR 1910-11.**

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	No. of Hands Employ'd	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Roseworthy	1,890	739	589	67	83	12	1,217	4,050
Kybybolite...	2,256	397	263	16	118	7	885	750
Murray Bridge	59	24	14	...	10	2	420	385
Parafield ...	110	42	39	...	3	3	1,100	250
Loxton and Veitch's Well	4,600	427	415	...	12	3	1,533	924
Shannon ...	1,164	83	83	...	...	4	320	250
Minburra ...	3,300	...	...	...	...	3	1,270	...

6. *Western Australia.*—A considerable amount of developmental work has been done of late years towards the promulgation of agricultural knowledge on the three State farms at Chapman, Narrogin, and Hamel, and, more recently still, on the experimental farms at Brunswick and Nangeenan.

(i.) *The Chapman Farm* stands in the centre of a vast stretch of country lying twenty-five miles north of Geraldton and fifteen miles east of Northampton. Until a few years ago the expanse of land referred to was almost exclusively devoted to grazing, and it was mainly to prove its capabilities, and thus promote settlement, that the farm was established. The whole of the available land has since been selected, and settlement has outrun the extent of the area in question. Collaterally the object of the farm has been extended; it has become the medium whereby practical instruction in farming is provided for intending settlers in quest of a training which will fit them for their work. The farm, which has an area of 1280 acres, is well watered by the Chapman River and by wells served by windmills; it is securely fenced and subdivided. Stud stock are kept and bred, the young stock being sold annually. The stock consists of a stud of Suffolk Punch horses, a herd of Dexter Keries, a flock of pure-bred Shropshire ewes and rams, Angora goats, and various kinds of poultry.

(ii.) *The Narrogin Farm.* The initial object of this farm was to practically demonstrate the larger return consequent upon improved cultivation of the land; to raise stud stock for the benefit of the farmers, to raise clean seeds for sowing their land, and to offer a field for training farmers' sons and others wishing to settle on the land. Students are admitted at an annual fee of £10; they are taught the practical farm work, such as handling live stock, and the use of various farm implements. Lectures are given at

intervals by the scientific staff attached to the Agricultural Department. Experimental work is a merely subsidiary feature. The total area is 2826 acres. During the year 1910 there were eight students on the rolls.

(iii.) *The Hamel State Farm.* This farm, which formerly carried out experimental work consisting chiefly of testing new varieties of grasses and fodder plants, cereals, fruits and tubers, was closed in September, 1909.

(iv.) *Other Forms of Agricultural Instruction.* The Government dairy expert is continually travelling and lecturing on dairying, and lectures are also given by the field-officer, the horticultural and viticultural experts, and others. Demonstrations are also given in the cultivation of vines and fruit trees, including budding, grafting, and pruning. A regular monthly journal and bulletins at frequent intervals on matters of importance are issued by the Agricultural Department. The distribution of seeds and plants is now practically confined to seeds of fodder plants. While there are no specific regulations, recipients are asked, with a view to collating information as to the most suitable varieties in different localities, to report results. Experimental plots are conducted at some of the State schools under the direction of the teachers. A special feature of the entomological work carried out by the Department of Agriculture is the collection, breeding and distribution of parasites on insect pests. This work has been carried out with excellent results, several pests which were formerly a great source of trouble and expense being now practically non-existent.

(v.) *Particulars of State and Experimental Farms.* Particulars of the farms at Narrogin, Chapman, Brunswick, and Nangeenan for the year 1910 are given hereunder:—

**WESTERN AUSTRALIA.—PARTICULARS OF STATE AND EXPERIMENTAL FARMS  
FOR THE YEAR 1910.**

Name of Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	Number of Hands Employed	Value of Plant and Machinery.	Value of Produce for Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Narrogin ...	2,826	336	280	13	43	4	600	647
Chapman ...	1,280	341	302	...	39	6	351	629
Brunswick ...	811	200	17	3	180	6	844	1000
Nangeenan...	2,088	335	300	1	34	4	810	1606

7. *Tasmania.*—In Tasmania there is a Council of Agriculture consisting of eleven members, whose duties are to collect and publish information of every kind calculated to prove beneficial to agriculturists, such as suitableness of various districts for growth or production of animal and vegetable products, information respecting plants, methods of cultivation, breeding and feeding animals, and how best to improve the same: to prevent as far as possible the introduction and spread of diseases and pests, and to publish bulletins, abstracts, and reports containing all such information as may be desirable. Other matters embrace the employment of experts in any branch of agricultural science, distribution of plants and seeds for experiment, and the establishment of local boards of agriculture in different parts of the State. Lectures are given by the experts from time to time, and useful information and knowledge is diffused by means of the monthly gazette published by the Council, and also by means of special bulletins. There are no agricultural colleges or experimental farms, and practically no agricultural teaching is given in the elementary schools.

## § 21. Government Loans to Farmers.

1. **Introduction.**—All the Australian States have established systems under which financial aid is rendered to agriculturists by the Government. The principle upon which such aid is founded was probably first practically applied in Germany, viz., in the year 1770, when the *Landschaften Bank* was created. The establishment of the *Crédit Foncier* nearly a century later in France was a creation of a similar character. This latter institution was designed to enable house and land owners to raise money on mortgage at a low rate of interest, with facility for repayment by an annuity including redemption of the capital. It dates from 1852, but the mortgage bank known as the *Caisse Hypothécaire*, which, after a struggling existence, was finally liquidated in 1846, was based essentially on the same principle. Over the operations of the *Crédit Foncier*, created under governmental patronage and invested with such special privileges as to virtually constitute it a monopoly, the Government exercised a direct control, viz., by appointing its governor and its two deputy-governors. The *Crédit Foncier* was empowered to lend money only on a first mortgage, and to the amount of one-half of the estimated value of houses and farms, and one-third that of vineyards, woods, and other plantations, and the commission charged could not exceed six-tenths per cent. The system developed and adopted in the Commonwealth, with the object of assisting farmers to make improvements or to develop or utilise the agricultural or pastoral resources of the land, is analogous. Particulars of advances made under the *Closer Settlement* and similar Acts are dealt with in the section on *Closer Settlement*. (See page 298.)

2. **Particulars of Transactions in each State, 1908 to 1911.**—The subjoined table gives particulars of transactions in each State in which advances to farmers are made, for the years 1908 to 1911 inclusive. Tasmanian figures are not available for 1908.

### STATE GOVERNMENT ADVANCES DEPARTMENTS.—PARTICULARS OF LOANS TO FARMERS, 1908 to 1911.\*

State.	TOTAL ADVANCED TO DATE.				BALANCE DUE.			
	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£	£	£
New South Wales †	789,333	1,062,625	1,362,853	1,617,192	423,511	591,292†	795,113†	928,086
Victoria ...	2,254,488	2,492,698	2,657,713	2,797,323	1,202,785	1,293,404†	1,308,425†	1,306,657
Queensland ...	153,228	187,014	235,793	306,944	119,344	136,946	163,640	206,997
South Australia §	1,233,264	1,386,153	1,544,946	1,786,762	631,413	668,535	710,316	819,818
Western Australia	743,598	1,004,675	1,257,082	1,540,241	610,202	835,239	935,960	976,811
Tasmania ...	...	5,687	9,187	14,610	...	5,657	8,521	13,561
Commonwealth...	5,173,911	6,138,852	7,067,574	8,063,072	2,987,255	3,531,073	3,921,975	4,251,930.
	ANNUAL PROFITS.				ACCUMULATED PROFITS.			
	£	£	£	£	£	£	£	£
New South Wales †	†	4,661	5,390	8,200	†	6,583	8,039	15,606
Victoria ...	6,751	7,037	5,926	3,022	68,949	75,987	81,913	84,936†
Queensland ...	1,326	1,405	1,974	2,548	2,623	4,028	6,003	8,551
South Australia §	3,797	4,218	4,587	6,662	29,380	33,598	38,186	44,848
Western Australia	4,637	6,061	6,823	6,753	18,194	24,255	31,078	37,531
Tasmania ...	...	...	(—) 98	48	...	...	(—) 98	(—) 50
Commonwealth...	16,511	23,382	24,602	27,333	119,146	144,451	165,121	191,722

\* Compiled from figures furnished by the Government Savings Bank of Victoria. † For years ended 31st December prior. ‡ Returns not available. § Balance after deduction of special principal payments in advances. ¶ Includes loans to farmers and other producers and to local bodies on the security of their own rates. || Including profits in connection with House and Shop loans.

3. *New South Wales.*—(i.) *Initial Legislation.* New South Wales adopted the principle of advances to settlers on 4th April, 1899, when the Advances to Settlers Act received assent. The objects of this Act were to authorise the raising of a loan for making temporary advances to settlers; to provide for the making and repayment of such advances; and for purposes incidental to, or consequent on, those objects. In order to provide the funds necessary for the carrying out of this Act, the Colonial Treasurer was authorised to sell inscribed stock, secured upon the Consolidated Revenue, to an amount not exceeding £500,000, to be sold in amounts of £10 or some multiple of £10, and bearing interest at the rate of  $3\frac{1}{2}$  per cent. per annum, payable half-yearly. A board, consisting of not more than three members appointed by the Governor, called the Advances to Settlers Board, was appointed to deal with applications for loans and to decide whether they should be granted. The maximum amount that was authorised to be advanced to any one person was £200, and was to be repaid in full, together with interest at the rate of 4 per cent., within ten years of the making of the loan, but on no account was a loan to be granted except on the recommendation of the Board and when the security given was deemed satisfactory. An Amendment Act, was passed in 1902, by which the advance limit of £200 was increased to £500, and the period within which repayments were to be made was extended to thirty-one years. In the latter part of the same year a further Amendment Act came into force. Under the provisions of this Act the amount of inscribed stock was increased to £1,000,000, and the maximum amount of advance to any person was raised to £1500, interest on the latter being payable at the rate of not less than 4 per cent. per annum.

(ii.) *Legislation now in Force.* The above Acts were all repealed by the Government Savings Bank Act of 1906, which received assent on 21st December of that year. All property held by the Advances to Settlers Board was to be vested in three Commissioners appointed under this Act, who were styled "The Commissioners of the Government Savings Bank of New South Wales." An Advances Department of the Savings Bank was constituted, and debentures to the amount of £305,000 (that being the amount of stock issued under the Advances to Settlers Acts and held at the beginning of this Act) were issued, an equivalent amount of Government stock transferred to the Savings Bank Department being, at the same time, cancelled. All moneys, securities, documents, property, etc., held by or on behalf of the Advances to Settlers Board were transferred to, and became vested in, the Commissioners, and were carried to the accounts of the Advances Department of the Savings Bank.

(iii.) *Security on which, and Objects for which, Advances are made.* The Commissioners are authorised to issue debentures to the amount of £2,000,000, bearing interest at a rate not exceeding 4 per cent. per annum. They may lend moneys from the Advances Department (a) upon mortgage of an estate of inheritance in fee simple in any land in the State; (b) upon mortgage of conditional purchases with or without associated conditional leases, homestead grants or selections, settlement leases or purchases, or conditional purchase leases; and (c) on deposit at call or short notice in the Treasury on any bank of issue in the State, or on deposit in the Savings Bank Department. Loans may be made for any of the following purposes:—(a) To pay off existing encumbrances or to purchase the land; (b) to pay off money to the Crown in respect of the land; (c) to make improvements or to develop the agricultural or horticultural resources of the land; and (d) to build homes on the land.

(iv.) *Amount and Repayment of Advances.* No loan to any one person may amount to less than £50 or more than £2000, and applications for loans not exceeding £500 have priority over those of a larger amount. In no case does the amount of the advance exceed 80 per cent. of the Commissioners' valuation of the security. Advances may be made up to two-thirds of the value of the interest of the borrower in the land, buildings and improvements, except where the land is held as a conditional lease, homestead grant, settlement lease, homestead selection, settlement purchase, or conditional purchase as to which the first five years' certificate has not issued, in which cases the amount advanced



may not exceed one-half of the holder's interest in the improvements. Loans are made only in respect of first mortgages, and except in the case of loans on the security of freeholds or certificated conditional purchases, are repayable by equal half-yearly instalments within such period, not exceeding thirty-one years, as the Commissioners think fit. Loans granted on the security of freeholds and certificated conditional purchases are repayable either in the same manner as loans on other securities just mentioned, or at the expiration of a fixed term not exceeding five years, during which period interest only is payable.

(v.) *Advances on Purchases of Farms.* To facilitate close settlement on private estates suitable for the purpose, the Commissioners are authorised to make advances in order to assist persons in purchasing land. In the case of such advances the title to the land must be either freehold or a certificated conditional purchase, and the amount advanced may not exceed 80 per cent. of the Commissioners' valuation.

(vi.) *Closer Settlement Promotion Act 1910.* In 1910 an Act was passed whereby intending settlers might acquire by direct purchase from the owner, areas of private land suitable for closer settlement, under the same conditions, regarding residence, the payment of purchase money etc. as apply to settlement purchases under the Closer Settlement Acts. The purchasers are financed to the extent of 95 per cent. of the purchase money, not exceeding the bank's valuation of the properties. At the close of 1910, twelve estates were under consideration, the purchase prices aggregating £108,234. It is anticipated that a considerable amount of business will be done under this Act which will materially expand the operations of advances to farmers in this State.

(vii.) *Particulars of Advances to Farmers, 1906 to 1910.* The following table shews particulars of the advances made up to the 30th June in the year 1906, and to the 31st December in 1907, 1908, 1909 and 1910:—

**PARTICULARS OF GOVERNMENT ADVANCES TO FARMERS IN NEW SOUTH WALES,  
1906 to 1910.**

Particulars.	1906.*	1907.†	1908.†	1909.†	1910.†
Total applications received No.	11,188	12,397	13,796	15,497	16,861
Total amount applied for ... £	1,718,431	2,166,901	2,794,898	3,583,748	4,219,028
Total applications refused or withdrawn ... No.	5,010	5,541	5,632	6,256	6,725
Total applications approved No.	6,178	6,856	8,164	9,241	10,136
Total amount advanced ... £	647,624	789,333	1,062,625	1,362,853	1,617,192
Av. amount advanced per loan £	105	115	130	147	172
Repayments of principal ... £	236,415	365,823	470,548	566,102	689,106

\* Year ended 30th June. † Year ended 31st December.

4. **Victoria.**—(i.) *Legislation.* The Advances Department of the Government Savings Bank of Victoria was established by the Savings Bank Act of 1896, amended in 1901 and again in 1903. The funds for the purpose of making advances are raised by the issue of mortgage bonds, the total amount of which is limited to £3,000,000.

(ii.) *Security on which Advances Granted.* In order to assist farmers, graziers, market gardeners, or other persons employed in agricultural, horticultural, viticultural, or pastoral pursuits, the Savings Bank Commissioners are empowered to make advances, either by instalments or otherwise, upon the security of any lands held by such person either (a) in fee simple, or (b) under a Crown lease in which the rent received is taken by the Crown in part payment of the lands demised. Security must be, in every case, a first mortgage. A loan may be either in cash or in mortgage bonds at par face value at the option of the Commissioners.

(iii.) *Amount of Advances.* The limits of the advances are £50 and £2000, as in New South Wales, applications for advances under £500 having also similar priority. In the case of land held in fee simple or under lease as specified in (b) above, the amount of the advance which may be made must not exceed two-thirds of the actual value of such land at the time of advance, which is reduced by the amount of all rent payable in respect of the land, previous to the issue of a Crown grant for such. If the person appointed by the Commissioners as valuator of any land certify that the improvements effected thereon increase the productive power of the land and exceed £2 per acre, the Commissioners may make, notwithstanding anything contained above, an advance of fifteen shillings for every acre so improved.

(iv.) *Special Provision for Vineyards, Orchards, etc.* In the case of land which has acquired a special value by reason of being cultivated as vineyards, hop-grounds, orchards, fruit-growing plantations, etc., advances may be made on the following terms:—(a) The total amount which may be at any time advanced upon any such land may not be more than £100,000 in the whole. (b) The amount of two-thirds of the actual value referred to above may be increased by one-quarter of any special increase in value, but such increase is in no case to be considered as greater than £30 an acre. (c) No advance may be for a longer period than fifteen years.

(v.) *Purposes for which Advances Granted.* Advances are made for the following purposes only:—(a) To pay off existing liabilities; (b) to pay off money owing to the Crown in respect of the land; (c) to make improvements or to improve and develop the agricultural, horticultural, viticultural, or pastoral resources of the land.

(vi.) *Repayment of Advances.* The rate of interest charged on loans, originally fixed at 4½ per cent. per annum, may, by the Amendment Act of 1903, be altered by the Commissioners with the approval of the Governor-in-Council, up to but not beyond 5 per cent. per annum. All advances, together with interest, must be repaid by sixty-three half-yearly instalments, or such smaller number as may be agreed upon between the borrower and the Commissioners.

(vii.) *Particulars of Advances to Farmers, 1906 to 1911.* The following table gives particulars as to the loans raised and repaid by the Advances Department, the number and amount of applications received and granted, and the amounts advanced and repaid for each financial year from 1906-7 to 1910-11 inclusive:—

**LOANS TO FARMERS.—TRANSACTIONS OF ADVANCES DEPARTMENT OF GOVERNMENT SAVINGS BANK, VICTORIA, DURING EACH FINANCIAL YEAR, 1906 to 1911.**

Particulars.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	Total to the 30th June, 1911.
Bonds & debentures issued £	100,000	100,000	100,000	200,000	700,000	3,483,600
„ „ redeemed £	104,675	79,500	30,000	125,025	100,000	1,228,775
Applications received No.	550	704	825	669	684	13,187
„ „ Amount, £	217,572	344,703	468,085	319,060	356,410	6,379,445
Applications granted No.	295	390	502	416	339	7,109
„ „ Amount, £	98,840	162,615	250,895	177,765	149,610	*3,056,125
Amounts advanced ... £	89,975	143,180	238,210	165,015	139,610	2,797,323
„ repaid ... £	189,547	168,800	151,437	153,355	156,817	1,490,666

\* Of this amount £2,797,323 has been actually paid over to borrowers, a further sum of £28,935 being in course of settlement; the balance represents applications withdrawn or lapsed, or amounts offered but not accepted.

The number of loans at the 30th June, 1911, was 3096, and the average balance of each loan was £422 Os. 11d. The falling-off in the number of applications and amount of advances during the year 1906-7 was due, no doubt, partly to the fact that farmers had been favoured with good seasons during several years past, and partly also to the gradual fall in the rates charged for loans by other lenders. The number of repayments by farmers which became due during the year 1910-11 was 7105, representing amounts of £59,664 for interest and £29,740 for principal. These instalments have been well met, and on 30th June, 1911, there were only six farmers in arrear, the principal in arrear amounting to £26, and interest to £42.

(viii.) *Seed Advances Acts.* In 1896 and 1903, Acts were passed to enable seed and fodder to be advanced on certain terms to cultivators of land. These measures applied only to the season in which they were passed. Under the first-mentioned Act the Treasurer was authorised to pay out of the Consolidated Revenue a sum not exceeding £15,000, but no cultivator was to receive such quantity of seed as would sow more than 100 acres, and he had to give a preferable lien over the produce of all crop harvested within twelve months. By the Act of 1903 the amount authorised to be lent was £100,000, in sums not exceeding the value of £65 where granted on the security of a mortgage or license lien, or £40 where granted on the security of a preferable lien on crops. The borrower was required to give, as security, a mortgage over his farm or a license lien over the improvements thereon, and also, if required, a preferable lien on crops somewhat similar to that laid down in the previous Act. In 1904 an Act was passed to enable seed and manure to be advanced on certain terms to cultivators of land within the area controlled by the Carrum Irrigation and Water Supply Trust.

5. *Queensland.*—(i.) *Legislation.* The Queensland Government was authorised, under the Agricultural Bank Act of 1901, to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State, and a body of three trustees was appointed to administer the Act. The Government was empowered to raise a sum not exceeding £250,000 by the issue of debentures, bearing interest at a rate of not more than 4 per cent. The original Act was amended in 1904 and again in 1905, the latter amendment specifying that no advance be made to any alien.

(ii.) *Security on which and Purposes for which Advances are made.* Advances may be made to owners of agricultural lands or to occupiers of Crown lands held either as agricultural farms or homesteads, grazing farms or homesteads, unconditional selections, or miners' homestead leases, and may be for any of the following purposes:—(a) The payment of existing liabilities; (b) agricultural, dairying, horticultural, or viticultural pursuits on the holding; (c) making improvements or adding to improvements already made; (d) the purchase of stock, machinery, or implements. Advances are only made on the security of first mortgages.

(iii.) *Amount and Repayment of Advances.* No advance may exceed ten shillings in the pound of the fair estimated value of the holding in the cases of (a) and (b) above, while in the other cases the limit of the amount of the advance is twelve shillings in the pound of such value, and the advance at any time must not exceed £800. Applications for amounts not larger than £200 have priority over those for a larger amount. During the first five years following the date of the loan the borrower must pay interest at the rate of 5 per cent, per annum. After the expiration of that period the loan, together with the interest, must be repaid by half-yearly instalments within twenty years, the amount of such half-yearly instalment being £4 Os. 3d. for each £100 advanced. In the case of advances for the purposes of paying off existing liabilities or of buying stock,

machinery, or implements, the loan must be repaid by equal half-yearly instalments of the amount of £3 11s. for every £100 advanced within twenty-five years from the date of its granting.

(iv.) *Transactions of Agricultural Bank, 1907 to 1911.* The subjoined table shews particulars of the transactions of the Agricultural Bank for each year ended 30th June, from 1907 to 1911 inclusive:—

**PARTICULARS OF TRANSACTIONS OF THE AGRICULTURAL BANK, QUEENSLAND,**

**DURING EACH FINANCIAL YEAR, 1907 TO 1911.**

Particulars.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
Applications received... No.	503	512	586	746	1,101
"    "    Amount, £	69,472	70,107	92,363	114,901	165,562
Applications granted ... No.	313	319	430	680	905
"    "    Amount, £	36,357	36,706	50,113	79,518	114,606
Amounts advanced ... £	30,877	23,868	33,786	48,245	71,150
"    repaid ... £	12,929	16,740	16,184	21,551	27,793
"    outstanding to date £	112,216	119,344	136,947	163,641	206,998

**6. South Australia.**—(i.) *Legislation.* Under the State Advances Act of 1895, amended in 1896 and 1901, a State Bank has been established in South Australia for the purpose of making advances (i.) to farmers and other producers, (ii.) in aid of industries on the security of lands held in fee simple or under Crown leases, and (iii.) to local authorities upon the security of their rates. The bank, managed by a board consisting of five trustees appointed by the Governor, has funds raised by the issue of mortgage bonds, carrying interest at a rate not exceeding 4 per cent., to an amount not greater than the total amount due to the bank for State advances, and in any case not greater than £3,000,000. On 23rd December, 1908, the Advances to Settlers on Crown Lands Act was passed. This measure is referred to in (iv.) below. Several Acts have, from time to time, been passed dealing with seed wheat advances. These were, in the main, similar to those enacted in Victoria, referred to in 4 (viii.) above.

(ii.) *Amount and Repayment of Advances.* No advance to farmers or to other producers, or in aid of any industry, may exceed three-fifths of the unimproved value of the fee simple of the land and permanent improvements thereon, and if the land has acquired a special additional value by reason of cultivation as a vineyard or orchard, *plus* one-third of such special additional value. If the advance be on the security of a Crown lease, the amount of the loan may not exceed one-half the selling value of the lease, including the interest of the holder in any improvements on the land. The amount lent to any one person at any time may not exceed £5000. Advances are repayable by half-yearly instalments, the rate of interest, up to the limit of 5 per cent. per annum, being a matter of arrangement between the bank and the borrower.

(iii.) *Transactions of the State Bank, 1907 to 1911.* In addition to assisting farmers and other producers, the State Bank makes, as mentioned above, advances in aid of industries and also to local authorities. The following table shews particulars of the transactions with farmers of the State Bank for each year from 1907 to 1911 inclusive:—

**SOUTH AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF THE STATE BANK.**

FOR EACH YEAR ENDED 31ST MARCH, 1907 TO 1911.

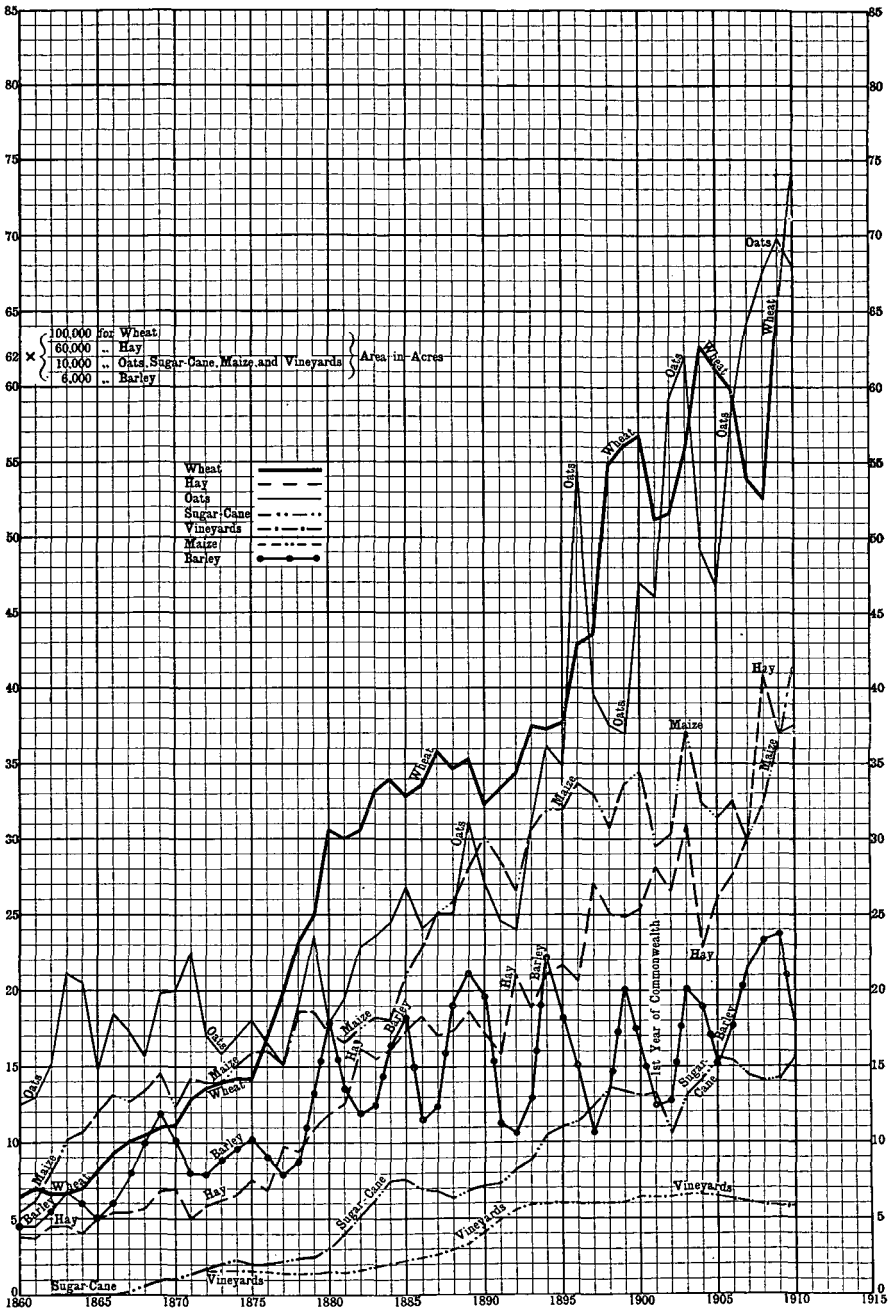
Particulars.	1907.	1908.	1909.	1910.	1911.
Loans raised ... .. £	57,165	64,180	138,700	57,089	49,279
„ repaid ... .. £	50,515	53,015	123,600	4,056	3,146
Applications received ... No.	260	250	796	301	399
„ „ Amount, £	111,609	138,466	348,777	192,619	300,098
Applications granted ... No.	146	210	718	234	190
„ „ Amount, £	67,420	93,177	224,820	79,037	127,729
Amounts advanced ... £	58,060	76,092	166,752	71,870	91,405
„ repaid ... .. £	51,265	50,727	105,501	52,960	50,014
„ outstanding to date £	355,951	381,316	442,567	461,477	502,868

(iv.) *The Advances to Settlers on Crown Lands Acts 1908 and 1909.* Under the 1908 Act a Board, called the Advances to Settlers Board, was created. The Treasurer is authorised to set apart a sum not exceeding £200,000 in any one financial year for the purpose of loans to settlers. The maximum amount which may be advanced to any one settler is £600, and for a period of five years following the date on which the advance is made the settler is required to pay interest at the rate of 5 per cent. per annum, payable half-yearly. At the expiration of that period it is provided that he must repay the amount advanced by fifty equal half-yearly instalments, together with interest at 5 per cent. on the balance outstanding. A rebate of 1 per cent. interest is allowed if the half-yearly payment is made within fourteen days of the date on which it falls due. Advances may be made on prescribed security for the purpose of making improvements on a holding, such as ring-barking, clearing, boring for water, etc.; or for discharging a mortgage existing on a holding; or for stocking a holding, provided that the necessary improvements have been made on the land. The amount of the advance may not exceed a sum equal to fifteen shillings in the pound on the value of improvements already made, and may not exceed twelve shillings in the pound on improvements made if the land be mortgaged.

During the year ended 30th June, 1909, thirty-four applications, amounting to £6095 were received for advances under this Act. Of these, eleven, representing a value of £1775, were granted, the amount actually advanced being £276. For the year 1909-10, the number of applications for advances was 102, aggregating £19,577, and fifty-five, totalling £9418, were approved of. As, however, some of these were granted by instalments, the actual amount advanced was £8087. During 1910-11, there were 109 applications received, aggregating £21,996; of these, 82, amounting to £15,131, were granted, of which amount £12,747 was advanced by the close of the year. On the 30th June, 1911, the sum of £19,022 represented the amount of advances outstanding on that date.

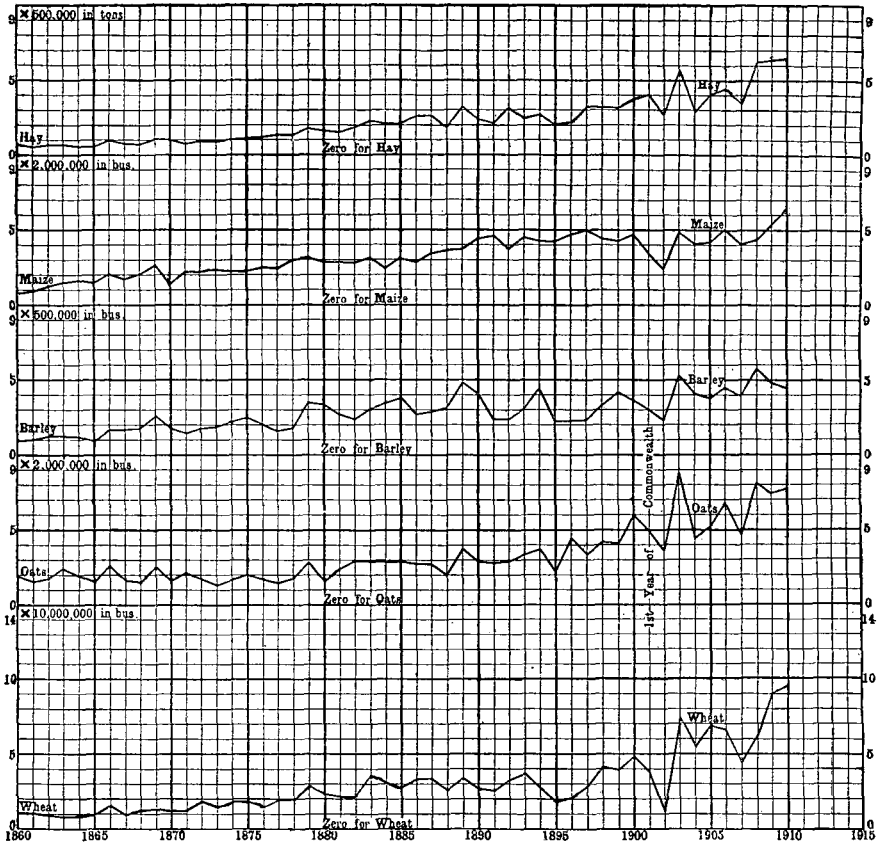
**7. Western Australia.—(i.) Legislation.** By the Agricultural Bank Act of 1894 the Governor of Western Australia was empowered to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State. This Act was amended from time to time until a consolidating Act was passed in the year 1906 repealing all previous enactments on the subject. Under this last Act the bank was placed under the control of three trustees, appointed by the Governor, in whom is vested the whole of the bank property. The necessary funds are provided for by the issue of mortgage bonds bearing interest at a rate not exceeding 4 per cent. per annum. The amount authorised to be raised was £1,000,000, but by an Amendment Act in 1907 this sum was increased to £1,500,000, and by a further amendment in 1909 it was increased to £2,000,000. In the latter half of the year 1910, a Bill was introduced into Parliament by which it was proposed to make the amount authorised to be raised £2,500,000.

GRAPHS SHEWING THE AREA UNDER THE PRINCIPAL CROPS IN THE COMMON-WEALTH FROM 1860-1 TO 1909-10.



**EXPLANATION OF GRAPHS.**—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left-hand of the diagram. The height of each graph above the base line denotes, for the crop to which it relates, the total area under cultivation in the Commonwealth during the successive seasons.

GRAPHS SHEWING THE PRODUCTION OF THE PRINCIPAL CROPS IN THE COMMON-  
WEALTH FROM 1860-1 TO 1909-10.



(See pages—for wheat, 365; oats, 372; barley, 379; maize, 376; and hay, 388.)

EXPLANATION OF GRAPHS.—In this diagram a separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of the wheat graph, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 500,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each graph above its base line denotes the aggregate yield in the Commonwealth of that particular crop during the successive seasons.

(ii.) *Purposes for which Advances may be made.* The bank is authorised to make advances for (a) ring-barking, clearing, fencing, draining, or water conservation; (b) for discharging any existing mortgage; (c) for the purchase of stock for breeding purposes; or (d) for the purchase of agricultural machinery manufactured in Western Australia subject to the employees engaged in the manufacture of such machinery being paid the ruling rate of wages.

(iii.) *Amount of Advances.* Advances may be made to an amount not exceeding £400 up to the full value of the improvements proposed to be made. Further advances may be made to an amount not exceeding £250 up to half the value of additional improvements proposed to be made. No advance, however, for the purpose of discharging existing mortgages may be made to an amount exceeding three-quarters of the value of improvements already made, and the total advances to any one person may not at any time exceed £750. Not more than £100 may be advanced to any person for the purpose of purchasing stock or agricultural machinery. Advances are made only on a first mortgage, but a second mortgage may be taken as a collateral security. When any land is held by two or more persons as joint proprietors, the amount to be advanced may be multiplied by the number of such joint proprietors.

(iv.) *Repayment of Advances.* During the five years following the date of the loan the borrower pays interest only, at the rate of 5 per cent. per annum. After the expiration of that period the amount advanced, with interest at 5 per cent., must be repaid within twenty-five years by equal half-yearly instalments. In the case of advances for the purpose of buying stock the bank fixes the time and manner of repayment.

(v.) *Particulars of Transactions of Agricultural Bank, 1904 to 1911.* The following table gives particulars of transactions of the Agricultural Bank for each year from 1904 to 1911 inclusive :—

#### PARTICULARS OF TRANSACTIONS OF AGRICULTURAL BANK, 1904 to 1911.

AMOUNTS ADVANCED FOR WHICH IMPROVEMENTS HAVE BEEN EFFECTED—

Year ended the 30th June.	Amounts Advanced.	Improvements Effectuated.							Total.
		Clearing.	Cultivating.	Ring-barking.	Fencing.	Draining.	Wells and Reservoirs.	Buildings.	
	£	£	£	£	£	£	£	£	£
1904	215,000	243,870	60,454	10,787	17,265	1,675	9,861	33,168	377,080
1905	297,600	310,602	67,342	12,454	21,243	2,012	12,355	44,203	470,211
1906	394,164	398,376	86,837	17,044	30,805	2,596	15,482	57,005	608,145
1907	525,178	512,471	108,588*	26,845	46,524	3,273	21,616	75,953	795,270
1908	743,599	643,341	120,688*	44,363	98,663	4,127	34,789	82,325	1,028,296
1909	1,004,675	780,907	124,338*	62,711	177,410	4,675	48,543	83,708	1,282,292
1910	1,259,550	899,712†	124,782*	81,042	240,729	5,043	61,887	83,868	1,496,563
1911	1,540,242	1,031,891†	124,812*	107,676	297,077	5,386	78,581	83,868	1,729,291

\* Including £4321 for orchards.

† Including £6300 in 1910 and £8611 in 1911 for poison and blackboy grubbing.

The following table gives particulars as to the amount of loans raised and repaid, the number and amount of applications received and granted, and the amounts lent and repaid for each financial year from 1906-7 to 1910-11 inclusive :—



**WESTERN AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF THE AGRICULTURAL  
BANK FOR EACH FINANCIAL YEAR, 1906-7 to 1910-11.**

Particulars.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
Applications received ... No.	1,970	2,598	2,915	2,593	2,839
"    "    Amount, £	278,625	368,710	433,575	439,425	534,650
Applications granted ... No.	1,604	2,453	2,628	2,502	2,636
"    "    Amount, £	211,675	308,700	347,525	392,650	468,200
Amounts advanced ... £	131,271	218,421	261,077	252,407	283,159
"    repaid ... £	34,201	28,754	36,040	151,686	242,307
"    outstanding to date £	420,535	610,202	835,239	935,960	976,812

8. *Tasmania.*—(i.) *Legislation.* Under the State Advances Act 1907, assented to 22nd November of that year, authority is given to make advances to persons holding land on credit purchase. Three persons called "the Trustees of the Agricultural Bank of Tasmania" have power to administer the provisions of the Act. Funds were raised by the issue of debentures or inscribed stock for a sum not exceeding £50,000, interest at 4 per cent. per annum being payable on same.

(ii.) *Purposes for which Advances may be made.* Loans may be granted for any of the following purposes:—(a) payment of liabilities already existing on the holding; (b) carrying on agricultural, dairying, grazing, or horticultural pursuits; (c) making or adding to improvements.

(iii.) *Amount of Loans.* The minimum amount of any loan is £25, and the maximum £500. No advance may exceed one-half of the amount actually paid to the Crown in respect of the land held by the borrower under purchase upon the credit system, *plus* one-half of the present value of any improvements upon such land.

(iv.) *Repayment of Loans.* Interest at the rate of 6 per cent. per annum is payable on all advances made. After five years the borrower must begin to pay off the principal in fifty half-yearly instalments, but the advance may, at the option of the borrower, be repaid at any time sooner than is provided, and in larger instalments.

(v.) *Particulars of the operations of the Agricultural Bank.* During the eighteen months ended 30th June, 1909, seventy-seven applications for advances were made, which, with forty-nine carried over from the previous year, made a total of 126 applications, representing £11,110. Of these, ninety-four, of a value of £6571, were granted, the amount advanced being £5687. The amount repaid during the period was £30, leaving a balance of £5657 outstanding. For the year 1909-10, the number of applications for loans was eighty-two, totalling £5845. The trustees of the bank approved of sixty-one of these, amounting to £3593, and refused eleven, representing a value of £850, owing to the applicants not being entitled to loans in accordance with the Act. During the year one borrower failed to comply with the requirements of his mortgage deed and his selection was sold.

During 1910-11, ninety applications for loans totalling £7393 were received. Of these, 71, amounting to £5448, were approved and five were not entertained; the remainder were awaiting consideration of the trustees at the end of the year. The sum of £5423 was actually paid to borrowers during the year, making the total amount advanced under the Act to 30th June, 1911, £14,610, of which £1049 had been repaid.

## § 22. Graphical Representation of Crops.

1. **Areas of Principal Crops.**—A graphical representation of the areas in the Commonwealth devoted to each of the leading crops from 1860 to the present time is furnished on page 430.

(i.) *Wheat.* In the case of wheat, the Commonwealth's principal crop, the graph indicates that the fifty-one seasons under review divide themselves naturally into five distinct periods, three of moderate and fluctuating increases and two of extremely rapid increases. Thus, between the seasons 1860-1 and 1875-6, a moderate rate of increase was in evidence, the area increasing from 640,000 to 1,420,000 acres. During the five succeeding seasons a very rapid increase took place, the total in 1880-1 amounting to over 3,000,000 acres. For fifteen years thereafter the increase in area was not large, and in two seasons, viz., 1885-6 and 1890-1, marked decreases were experienced. The total increase for the fifteen years was about 700,000 acres, the total for 1895-6 being rather more than 3,750,000 acres. The succeeding five years witnessed a rapid increase in area to a total of more than 5,600,000 acres, followed by a further period of marked fluctuations; this latter period, however, contained the two seasons of maximum wheat-cropping, viz., that of 1909-10, when an area of 6,586,000 acres was so cropped, and that of 1910-11, when the area amounted to 7,372,456 acres.

(ii.) *Hay.* Hay-growing, which, next to the growing of wheat for grain, is the most important branch of agriculture in the Commonwealth, will be seen from the graph to have fluctuated very considerably from year to year during the period under review, these fluctuations being due in the main to seasonal variations and to variations in the relative prices of grain and hay crops. It will be seen that the features of the graphs are a moderate increase from 1860-1 to 1875-6, a fairly rapid increase from 1875-6 to 1882-3, moderate increase thence to 1896-7, succeeded by marked fluctuations from this point onwards with, on the whole, a moderate rate of increase until 1908-9 when the maximum of 2,453,000 acres was attained, succeeded by a decline in 1909-10 to 2,228,000 acres, and a slight increase in 1910-11 to 2,258,405 acres.

(iii.) *Oats.* The graph relating to oats exhibits extremely marked fluctuations from year to year in the area devoted to this crop, the general tendency, however, being one of increase, especially during the period 1892-3 to 1896-7. During the past four seasons following 1905-6 the area under oats has increased rapidly to a maximum of 698,000 acres in 1909-10, the succeeding year experiencing a slight falling off, when an area of 677,000 acres was so cropped.

(iv.) *Maize.* The graph relating to maize indicates that the area devoted thereto in Australia, although somewhat fluctuating, increased with fair rapidity until the season 1896-7, since when it has varied above and below the point then reached, on the whole remaining practically stationary up to 1909-10. The maximum area under maize prior to 1910-11, viz., 372,000 acres, was attained in the season 1903-4; in 1910-11 this record was exceeded by 43,000 acres.

(v.) *Sugar-Cane.* In the case of sugar-cane the graph shows a fairly rapid rate of increase to 1874-5, followed by a period of five years during which the area increased but slowly. From 1879-80, however, the sugar-cane area rose rapidly until in 1884-5 a total of more than 75,000 acres was reached. Then followed a period of diminished cultivation, and it was not until 1892-3 that so high a total was again attained. After this the

area rose rapidly to 136,000 acres in 1898-9, but during the next five years a decline took place, the area for 1903-4 being 132,000 acres. The season of maximum area, viz., 156,000 acres, was 1905-6. A marked decline in area was in evidence during the four following seasons; in the year 1910-11, however, the former maximum was again attained.

(vi.) *Barley.* The Commonwealth barley crop has exhibited from time to time very marked fluctuations in area. The graph representing this crop shews consequently a very irregular line. The total has, on the whole, increased but slightly since 1880, rapid increases in certain years being succeeded by equally rapid decreases in subsequent years. The maximum area under barley, viz., 143,000 acres, was attained in the season 1909-10.

(vii.) *Vines.* The graph relating to area under vines, from 1872-3 onwards, indicates that there were two periods of very slow increase, one from 1872-3 to 1881-2, the other from 1893-4 to 1904-5. Between these, viz., from 1881-2 to 1893-4, a moderate rate of increase of area was experienced, the total for the Commonwealth advancing during that time from 14,600 acres to 57,400 acres, while since 1904-5 the area has fallen consistently. The season of maximum area under vineyards was 1904-5, with a total of about 65,700 acres.

2. **Production.**—The diagram on page 431 furnishes a graphical representation of the aggregate yields from 1860-1 to 1910-11 of five of the principal crops of the Commonwealth.

(i.) *Wheat.* This graph brings out clearly the fact that while on the whole the production of wheat in the Commonwealth is increasing with fair rapidity, the fluctuations in the total quantity produced have been more marked in recent than in earlier years. Thus since the year 1890 there have been three seasons of extremely low output, viz., in 1891-2, 1895-6, and 1902-3, with aggregate yields respectively of 25,700,000 bushels, 18,300,000 bushels, and 12,400,000 bushels. On the other hand there have been five seasons in which the total production was exceptionally high. These will be seen from the graph to have been the seasons 1893-4, 1900-1, 1903-4, 1909-10, and 1910-11, the total yields for which were 37,100,000 bushels, 48,400,000 bushels, 74,100,000 bushels, 90,400,000 bushels, and 95,100,000 bushels respectively. Each of these yields represented at the date of its attainment the maximum Australian wheat crop, the last-mentioned being the highest yet reached.

(ii.) *Oats.* From 1860-1 to 1880-1 the oat crop of the Commonwealth, although exhibiting from year to year fluctuations more or less marked, gave no indications of a tendency to increase with the advance in population. This is well shewn in the diagram, by the persistence with which the graph for this period adheres to the line denoting 4,000,000 bushels, the yield for 1880-1 being actually lower than that for 1860-1. From this latter season to 1894-5 the variation was on a somewhat higher level, and is shewn in the diagram to have been in the vicinity of the line representing 6,000,000 bushels. From this point onwards a tendency to more rapid increase in production is in evidence, obscured somewhat by extensive fluctuations corresponding to those referred to above in the case of wheat. Thus in 1895-6 and 1902-3 the total yields were only 4,400,000 and 7,300,000 bushels respectively, while in 1900-1 and 1903-4 aggregates respectively of 12,000,000 and 17,500,000 bushels were reached, this latter being the maximum oat crop of the Commonwealth.

(iii.) *Barley.* The Australian barley crop will from the graph be seen to have fluctuated very considerably throughout, these variations being due rather to fluctuations.

in the area sown than to adverse seasons. From 1879-80 to 1902-3 the curve rises above and falls below the line representing 1,500,000 bushels. For more recent years the graph bears the evidence of an increasing, though still fluctuating, output. The maximum barley crop of the Commonwealth was that of 2,870,000 bushels in 1908-9.

(iv.) *Maize*. The maize graph indicates a rapid increase in output from 1860-1 to 1869-70, followed by a moderate increase from the latter season to 1886-7, and a further rapid increase to 1891-2. From the last-mentioned season onwards the production has fluctuated considerably, but little increase has, on the whole, been experienced, the total for 1891-2 being 9,300,000 bushels, as compared with 10,770,000 bushels for 1909-10, the maximum Australian maize crop up to that date; this was exceeded in the following season, when the production of maize amounted to 13,044,081 bushels. As in the case of all other crops, the maize yield for 1903-4 was much higher than those for the years immediately preceding and succeeding.

(v.) *Hay*. The graph relating to the Commonwealth output of hay indicated a fairly continuous increase in production from the season 1860-1, when the total stood at 340,000 tons, to that of 1887-8, when it reached 1,330,000 tons. In subsequent years marked fluctuations have been in evidence, but the tendency has, on the whole, been one of increase. The maximum hay crop of the Commonwealth was that of the season 1910-11, when the total production reached 3,176,000 tons.

## SECTION IX.

## FARMYARD AND DAIRY PRODUCTION.

## § 1. Introductory.

1. **General.**—Amongst the live stock brought out by Captain Phillip in 1788 were included one bull, four cows, one calf, and twelve pigs, these being established at Farm Cove when Port Jackson was settled. Of the early importations of cattle the greater part was slaughtered to relieve the necessity of the colonists in the famines which several times threatened the existence of the young community. It may be noted that the existing herds have sprung not only from the original stock, but have been improved by the introduction of stud cattle and pigs, especially during late years. Stock-raising, with regard to the special requirements of dairying, etc., has in fact been scientifically considered only in comparatively recent times. The technical advances made in the manufacture of butter and cheese in Europe and elsewhere, and the necessity for keeping pace with them in connection with the export trade, of Australia, demanded in Australian stock-raising a judicious crossing of strains with a view to improving the quantity and quality of the milk supply. Further, the pasturage was improved by the eradication of grasses and herbage of little or no use, and the planting of suitable grasses and other fodder plants. Much of the indigenous herbage forms, however, excellent food for stock. Although some of the State Governments have made considerable importations for stud purposes, the importation of British and other cattle for breeding is ordinarily under private enterprise, but is safeguarded by Government supervision in order to prevent the introduction of diseases and pests, with the result that Australia is comparatively free from stock diseases. Permanent structures for the shelter of dairy herds are required only to a very small extent in the Commonwealth, the mildness of the climate rendering it possible for stock to thrive in the open throughout the year. Practical experience has, however, demonstrated the wisdom of rugging or otherwise protecting dairy cattle during the colder months, while the provision of shelters in the form of plantations of trees is attended by beneficial results. Where winter fodder must be grown it is given to the cattle in the fields, and consists of lucerne, oats, maize, barley, rye, and mangolds. Ensilage is highly recommended by dairy experts, and increasing use is being made thereof. Continued expansion of the dairying industry, and particularly its extension into non-coastal districts, will involve a more general use of the silo.

Some of the indigenous Australian grasses are particularly suitable for dairy cattle, since they possess milk-producing as well as fattening properties, but many of the holdings are sown with English and other imported grasses, varieties being chosen to suit particular localities. The area of land devoted to green food and permanent artificially-sown grasses is constantly increasing, its produce being, for the most part, devoted to the depasturing of dairy herds. The opinion, long held, that only heavily-grassed country with good rainfall was profitable for dairying has been controverted by experience, it having been shown that with proper care more lightly clad regions can be made to yield good milk results.

2. **State Supervision of Industry.**—Each of the State Agricultural Departments exercises considerable supervision in regard to the industry. Dairy experts are employed to give instruction in approved methods of production, to examine animals, to inspect

the buildings used for milking, separating and butter-making, and to examine the marketable produce. A high standard of dairy hygiene, cleanliness of *personnel* and *matériel*, and purity of produce have also been insisted upon under State laws. Financial assistance has been given to facilitate the economic handling of dairy products, and much benefit has resulted, the advances having generally been promptly repaid.

For the maintenance of the purity and quality of Australian butter, the Commonwealth regulations under the Commerce Act 1905 enact that butter intended for shipment overseas must be covered with a true trade description, and that at least the following matter should appear in the brand:—The word "Australia," the name of the State in which it was produced, net weight, manufacturer's or exporter's name or registered brand, and the words, "pure creamery butter," "pastry butter," "milled butter" (that is, butter which is a mixture or blend of two or more butters ordinarily packed alone and under separate names or brands), or "re-packed butter," as the case may require. Other matter may be added, but it must be true, and not liable to mislead. *Margarine* must be so stamped or marked. All butter, etc., intended for export must be sent for inspection to appointed places. The inspecting officer issues a certificate on the authorised form.

The regulations now in force contain important provisions in regard to the standard for export dairy products. By means of these provisions purity and quality are guaranteed. Trade is also facilitated, since quantities of butter, etc., are purchased solely on the certificate issued, without inspection. The standards are as follow:—

*Butter*.—Butter which contains only—No fat other than butter fat; not more than 15 per cent. of water, 3 per cent. of casein, 0.5 per cent. of boric acid, 4 per cent. of salt; not less than 82 per cent. of butter fat; any colouring matter deemed by the Minister to be harmless.

*Cheese*.—Cheese which does not contain any foreign matter, other than rennet, salt, or colouring matter deemed by the Minister to be harmless.

*Concentrated Milk*.—Pasteurised milk which is concentrated by any process whatever, and not subsequently sterilised, and which contains not less than 9 per cent. of butter fat and 24 per cent. of milk solids not fat, and no foreign substance other than 0.5 per cent. of boric acid.

*Condensed Milk*.—Milk which is condensed or concentrated by any process whatever, with or without the addition of cane sugar, and which, when containing such sugar, also contains not less than 9 per cent. of butter fat, and 22 per cent. of milk solids not fat, or which, when not containing such sugar, contains not less than 8 per cent. of butter fat and 20 per cent. of milk solids not fat.

*Dried Milk*.—Milk from which the water has been removed by a process of heating, without the addition of any extraneous matter, and which, when dissolved in or treated with water, according to any directions supplied by the maker or vendor thereof, produces milk as defined in this Schedule.

*Honey*.—The ripened, unfermented honey of bees, which does not contain any foreign matter.

*Milk*.—The milk of cows, whether mixed or not, and containing not less than 3 per cent. of butter fat, nor less than 8.5 per cent. solids not butter fat.

The trade description prescribed must be permanently affixed on the goods or on the containing packages. In the case of butter the trade description must, with additional particulars, be indelibly impressed on the outer covering.

Butter and cheese are to be graded by the examining officer as follows:—

**BUTTER.—**

- Superfine—Pure creamery butter, graded at 95 to 100 points.
- First grade—Pure creamery butter, graded at 90 to 94 points.
- Second grade—Pure butter, graded at 83 to 89 points.
- Third grade—Pure butter, graded at 75 to 82 points.
- Pastry butter—Pure butter, graded at less than 75 points.

**CHEESE.—**

- Superfine—Pure cheese, graded at 95 to 100 points.
- First grade—Pure cheese, graded at 90 to 94 points.
- Second grade—Pure cheese, graded at 83 to 89 points.
- Third grade—Pure cheese, graded at 75 to 82 points.

In grading butter and cheese, the maximum points to be awarded are: Flavour and aroma, 50 points; texture, including body, grain, and moisture, 30 points; condition, including colour, salting, packing, and covering, 20 points. An official grade mark is to be applied to all export butter and cheese graded at over 89 or under 75 points, as follows:—

- Butter and cheese graded at 95 to 100 points—Superfine.
- Butter and cheese graded at 90 to 94 points—First grade.
- Butter graded at under 75 points—Pastry.
- Cheese graded at under 75 points—Below standard.

Impure butter and cheese are not graded at all. The exportation of unsound, inferior, or abnormal dairy products is prohibited, unless the trade description applied to the goods includes the words, "Below Standard."

**3. Mixed Farming.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places remote from the metropolis well-equipped factories have been established.

**4. Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or "creameries," has resulted in a considerable reduction in the cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is rapidly diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires only about 2.6 gallons.

**5. Butter and Cheese Factories.**—The establishments in the Commonwealth where the manufacture of butter, cheese, and condensed milk was carried on, numbered 548 in 1910. These were distributed as regards the various States as follows:—New South Wales, 181; Victoria, 203; Queensland, 82; South Australia, 53; Western Australia 3; Tasmania, 26.

## § 2. Milk, Butter, and Cheese.

1. **Dairy Herds.**—Since the drought year 1902 there has been in each State a general yearly increase in the number of dairy cows. In New South Wales, Victoria, South Australia proper, and Tasmania—as will be seen from the table of cattle and dairy cattle given below—the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory, and Western Australia there is a greatly preponderating number of other cattle, dairying not being firmly established in the tropical regions of the Continent. In the tables which follow in this section the return for Northern Territory is, unless shewn separately, included in South Australia, the dairy products from the newly-acquired Commonwealth territory being very small:—

## CATTLE AND DAIRY CATTLE, COMMONWEALTH, 1906 to 1910.

State.			1906.	1907.	1908.	1909.	1910.
New South Wales	...	All Cattle	2,549,944	2,751,193	2,955,934	3,027,727	3,140,307
	...	Dairy Cows	667,708	713,223	736,683	755,879	826,443
Victoria	...	All Cattle	1,804,323	1,842,807	1,574,162	1,549,640	1,547,569
	...	Dairy Cows	701,309	709,279	609,166	625,063	668,777
Queensland	...	All Cattle	3,413,919	3,692,232	4,321,600	4,711,782	5,131,699
	...	Dairy Cows	215,000†	232,583	304,281	333,839	365,444
South Australia	...	All Cattle	325,724	334,671	340,376	344,034	384,862
	...	Dairy Cows	97,843	100,743	106,269	110,757	119,628
Western Australia	...	All Cattle	690,011	717,377	741,788	783,217	825,040
	...	Dairy Cows	34,822	31,489	31,522	29,176	30,785
Tasmania	...	All Cattle	211,117	215,523	205,827	199,945	201,854
	...	Dairy Cows	49,132	54,245	50,331	50,996	52,966
Northern Territory	...	All Cattle	354,371	374,683	407,992	414,046	513,383
	...	Dairy Cows	680	489	546	464	556
Commonwealth	...	All Cattle	9,349,409	10,128,486	10,547,679	11,040,391	11,744,714
	...	Dairy Cows	1,766,494	1,892,351	1,839,398	1,906,174	2,064,599

† Statistics not collected: figures estimated.

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, probably reaching as high as 500 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, something under 300 gallons per annum. The best yields over a series of years appear to be in South Australia, New South Wales, Victoria, and Tasmania, while Western Australia is below Queensland. In the following table the average yields per cow for 1908, 1909 and 1910 are taken from the number of dairy cows which were, during any part of the year, milking. The average given is considerably below that for cows which were yielding during the greater part of the year.

## PRODUCTION OF MILK, COMMONWEALTH, 1908, 1909 and 1910.

Heading.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1908—							
Dairy cows	No. 736,683	609,166	304,281	106,815	31,522	50,931	1,839,398
Production of milk	gals. 188,518,562	148,122,200	63,934,402	28,883,000	4,531,212	13,520,000*	447,509,376
Aver. yield per cow	gals. 257	243	210	270	144	265	243
1909—							
Dairy cows	No. 755,879	625,063	333,839	111,221	29,176	50,996	1,906,174
Production of milk	gals. 201,183,337	162,994,658	70,642,868	29,778,032	4,593,446	11,600,000*	481,092,361
Aver. yield per cow	gals. 266	261	212	268	168	227	252
1910—							
Dairy Cows	826,443	668,777	365,444	120,184	30,785	52,966	2,064,599
Production of milk	gals. 235,577,702	196,674,373	37,648,322	34,672,756	5,125,124	13,300,000*	572,998,277
Aver. yield per cow	gals. 285	294	240	288	166	251	278

\* Estimated.



**3. Butter and Cheese.**—The butter output shews, in general, a tolerably steady increase since the drought year 1902, the most marked development being in Queensland. The production of butter reached its highest figures in 1910, the highest previous yield being in 1906. The same year marks the highest cheese production, the return being somewhat better than that for 1909. In both butter and cheese a falling-off is shewn in some of the States in 1907 and 1908, due to the dryness of the season. There was a recovery in 1909. For the five years from 1906 to 1910 the figures are:—

**PRODUCTION OF BUTTER AND CHEESE, COMMONWEALTH, 1906 to 1910.**

State.	1906.	1907.	1908.	1909.	1910.
<b>BUTTER.</b>					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	58,941,137	60,041,429	61,380,876	62,865,608	76,624,890
Victoria ...	68,088,168	63,746,354	48,461,398	55,166,555	70,603,787
Queensland ...	22,746,593	22,789,158	23,836,357	24,592,711	31,258,333
South Australia ...	8,873,632	8,519,340	8,130,560	8,482,168	10,717,486
Western Australia ...	380,157	436,529	365,593	414,453	855,188
Tasmania* ...	904,930	847,860	3,140,573	2,751,757	3,365,982
Commonwealth† ...	159,934,617	156,380,670	145,317,357	154,273,252	193,425,606
<b>CHEESE.</b>					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	5,458,645	4,586,857	4,763,360	4,775,268	5,191,089
Victoria ...	4,877,593	4,397,909	4,328,644	5,025,834	4,530,893
Queensland ...	2,921,140	2,684,588	3,199,510	3,662,497	4,146,661
South Australia ...	1,398,785	1,385,790	1,556,894	1,578,378	1,796,281
Western Australia ...	1,314	580	980	1,570	3,306
Tasmania* ...	190,481	327,839	910,400	731,390	868,781
Commonwealth† ...	14,847,958	13,383,563	14,759,788	15,774,837	16,537,011

\* Prior to 1908 Tasmanian statistics relate only to the quantities made in factories. † The totals for the Commonwealth here given prior to 1908 are exclusive of Tasmanian butter and cheese made elsewhere than in factories.

**4. Concentrated Milk.**—"Condensed" or "concentrated" milk denotes milk the bulk of which is reduced by evaporation, no sweetening agent being added. When a sweetening agent is added it is called "preserved" milk. Small quantities of such milk have been made, but the industry is at present by no means a large one. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the following quantities are returned for 1908, 1909 and 1910:—

**CONDENSED AND CONCENTRATED MILK MADE, 1908, 1909 and 1910.**

Year.	N.S.W.	Victoria.	Queensland.	Commonwealth.
	lbs.	lbs.	lbs.	lbs.
1908 ...	2,399,673	3,308,854	3,935,024	9,643,551
1909 ...	2,400,687	3,487,312	7,038,202	12,926,201
1910 ...	1,940,481	2,707,110	7,843,670	12,491,261

**5. Oversea Trade in Milk, Butter, and Cheese.**—The tables following give the imports, exports, and net exports or imports of butter, cheese, and milk. In each of the five years exports of butter exceeded imports; in three the cheese import was heavier than the export, and this was the case each year with milk.

# **IMPORTS, EXPORTS, AND NET IMPORTS OF BUTTER, CHEESE AND MILK, COMMONWEALTH, 1906 to 1910.**

## **IMPORTS.**

Products.		1906.	1907.	1908.	1909.	1910.
Butter ... .. lbs.		70,143	20,885	40,874	80,111	71,695
" ... .. £		3,133	910	2,368	4,078	3,570
Cheese ... .. lbs.		304,951	299,711	566,808	367,504	303,155
" ... .. £		11,533	12,371	20,433	14,720	13,772
Milk—concentrated and preserved <sup>1</sup> lbs.		10,672,265	9,279,091	9,145,306	7,459,232	8,543,158
" " " " £		189,316	170,478	180,194	145,736	135,297

## **EXPORTS.**

Butter ... .. lbs.	75,802,856	66,076,915	51,206,359	55,700,987	87,928,151
" ... .. £	3,240,063	2,890,261	2,387,450	2,402,619	3,952,808
Cheese ... .. lbs.	252,115	495,530	153,589	203,477	921,583
" ... .. £	6,832	12,896	5,237	5,771	22,178
Milk—concentrated and preserved <sup>1</sup> lbs.	31,540	322,119	309,789	360,821	517,634
" " " " £	6,375	6,305	7,013	7,852	10,289

## **NET EXPORTS.<sup>2</sup>**

Butter ... .. lbs.	75,732,713	66,056,030	51,165,485	55,620,876	87,856,456
" ... .. £	3,236,930	2,889,351	2,385,082	2,398,541	3,949,238
Cheese ... .. lbs.	52,836	195,819	413,219	164,027	618,428
" ... .. £	4,701	525	15,196	8,949	8,406
Milk—concentrated and preserved <sup>1</sup> lbs.	10,360,725	8,956,972	8,835,517	7,078,411	8,025,524
" " " " £	182,941	164,173	173,181	137,884	125,008

1. See definition on page 442.

2. — signifies net imports.

The large quantities of concentrated and preserved milk imported for local use indicate room for development in this industry.

**6. Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the net export or import subtracted or added, gives approximately the consumption in the Commonwealth. In the period considered hereunder, 1907 and 1910 were the only years in which the local supply of cheese was adequate:—

## **BUTTER AND CHEESE LOCALLY CONSUMED, 1906 to 1910.**

Product.	1906.	1907.	1908.	1909.	1910.
	lbs.	lbs.	lbs.	lbs.	lbs.
Butter ... Total ... ..	84,201,904	90,324,640	94,151,872	98,652,376	105,569,150
" ... Per head of mean population ...	20.7	21.9	22.4	23.1	24.2
Cheese ... Total ... ..	14,900,794	13,579,382	15,173,007	15,938,864	15,918,583
" ... Per head of mean population ...	3.7	3.3	3.6	3.8	3.7

The consumption in 1910 averaged 24.2 lbs. of butter and 3.7 lbs. of cheese per head of mean population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom is given as 19 lbs. per head, and is therefore only equal to about three-fourths of that of the Commonwealth.

### § 3. Pigs, Bacon, etc.

1. **Pigs.**—The pigs in Australasia numbered 43 in 1792; 4017 in 1800; 8992 in 1810; 33,906 in 1821; 66,086 in 1842; and 121,035 in 1851. The figures for each State in subsequent census years, and in the last five years, were as follows:—

NUMBER OF PIGS, COMMONWEALTH. 1861 to 1910.

State.	1861.	1871.	1881.	1891.	1901.	1906.	1907.	1908.	1909.	1910.
New South Wales ...	146,091	213,193	213,916	253,189	265,730	243,370	216,145	215,822	237,849	321,632
Victoria ...	43,490	177,447	239,926	286,780	334,295	220,452	211,002	179,358	217,921	333,281
Queensland ...	7,465	32,707	56,438	122,672	121,641	138,232	133,246	124,749	124,803	152,212
South Australia ...	69,286	95,542	120,718	83,797	88,886	111,240	90,741	78,454	80,410	96,386
Western Australia ...	11,984	14,265	22,530	25,930	61,052	56,293	53,399	46,652	47,062	57,628
Tasmania ...	40,841	52,863	49,660	73,520	58,716	42,985	46,704	47,945	55,705	63,715
Northern Territory	*	*	*	*	989	1,037	2,864	2,711	1,337	996
Commonwealth	319,147	586,017	703,188	845,888	931,309	813,569	754,101	695,691	765,137	1,025,850

\* Included in South Australia.

The number of pigs was highest in 1904, when for the first time it was over a million; prior to 1899 it had never reached 900,000. That year, the two immediately following, and 1904, 1905 and 1910 mark the highest totals. An examination of the returns shews remarkable fluctuations. In none of the States was the number as high in 1906 as in the preceding year, and in Tasmania alone was the figure for 1907 higher than that for 1906. A similar experience was met in 1908. In several States the falling-off over the three years is very marked. In 1909 a considerable recovery in the figures is shewn, increases over 1908 being large in New South Wales, Victoria, and Tasmania. The increase in 1910 in all the States is still more remarkable, being thirty-four per cent. in the whole Commonwealth. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, pages 334 and 335.

2. **Bacon and Ham.**—From 1905 to 1908 the production of bacon and ham in the Commonwealth shewed little annual variation. In 1909 there was a considerable falling-off, and a large increase in 1910. It will be noticed from the table above that the number of pigs in Australia in 1908 was much below the average.

PRODUCTION OF BACON AND HAM, COMMONWEALTH, 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	11,843,595	10,358,526	9,488,299	9,931,377	12,620,067
Victoria ...	18,051,166	17,545,720	14,411,401	13,620,485	16,438,837
Queensland ...	10,846,959	10,015,008	11,324,323	9,228,317	10,758,963
South Australia ...	†	2,311,004	3,392,162	3,348,050	3,741,942
Western Australia ...	272,494	209,419	152,896	120,623	121,154
Tasmania* ...	151,700	279,504	1,333,856	1,526,115	1,468,789
Commonwealth†	41,165,914	40,719,181	40,102,937	37,774,967	45,149,752

\* Prior to 1908 Tasmanian statistics relate only to quantities made in factories. † The totals for the Commonwealth here given are exclusive of Tasmanian bacon and ham made elsewhere than in factories prior to 1908, and of South Australian bacon and ham in 1906. ‡ Information not available.

3. **Oversea Trade in Pig Products.**—The oversea trade in pigs and pig products is shewn in the following tables:—

**IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK,  
PIGS, AND LARD, COMMONWEALTH, 1906 to 1910.**

Particulars.				1906.	1907.	1908.	1909.	1910.
<b>BACON AND HAM.</b>								
Imports ...	...	...	lbs.	194,059	237,644	273,922	244,903	204,488
" ...	...	...	£	7,171	9,625	10,013	9,384	8,687
Exports ...	...	...	lbs.	532,851	420,819	391,820	403,801	1,605,699
" ...	...	...	£	18,467	17,579	18,360	18,979	57,060
Net Exports	...	...	lbs.	338,792	183,175	117,898	158,898	1,401,211
"	...	...	£	11,296	7,954	8,347	9,595	48,373
<b>FROZEN PORK.</b>								
Imports ...	...	...	lbs.	139,363	187,479	110,647	109,620	106,757
" ...	...	...	£	3,717	5,312	3,329	3,301	3,227
Exports ...	...	...	lbs.	3,472,224	1,446,758	826,102	394,559	741,410
" ...	...	...	£	60,936	28,406	20,446	9,318	17,087
Net Exports	...	...	lbs.	3,332,861	1,259,279	715,455	284,939	634,653
"	...	...	£	57,219	23,094	17,117	6,017	13,860
<b>PIGS.</b>								
Imports ...	...	...	No.	24	7	39	31	50
" ...	...	...	£	1,269	69	968	1,177	799
Exports ...	...	...	No.	220	185	117	229	303
" ...	...	...	£	263	383	297	460	477
Net Exports <sup>1</sup>	...	...	No.	196	178	78	198	253
"	...	...	£	— 1,006	314	— 671	— 717	— 322
<b>LARD.</b>								
Imports ...	...	...	lbs.	64,561	36,625	313,060	358,213	198,897
" ...	...	...	£	1,294	980	7,681	9,148	5,573
Exports ...	...	...	lbs.	551,268	458,327	511,774	1,618,995	3,112,190
" ...	...	...	£	8,373	8,554	10,906	28,948	62,664
Net Exports	...	...	lbs.	486,707	421,702	198,714	1,260,782	2,913,293
"	...	...	£	7,079	7,574	3,225	19,800	57,091

1. — signifies net imports.

From 1901 to 1903 there was a considerable net import of bacon and ham, but for the following years there was a large net export. The local production of frozen pork and lard was for each of the years shewn more than sufficient for the local demand. The net export of pig products was considerably greater in 1910 than in previous years.

4. **Local Consumption of Bacon and Ham.**—From 1904 to 1910 the production of bacon and ham was sufficient to meet the local demand, and there was a surplus for export, but in 1901, 1902, and 1903 this was otherwise, and considerable quantities were imported.

**BACON AND HAM LOCALLY CONSUMED, 1906 to 1910.**

Consumption. <sup>1</sup>		1906.	1907.	1908.	1909.	1910.
		lbs.	lbs.	lbs.	lbs.	lbs.
Total ...	...	40,827,122	40,536,006	39,985,039	37,616,069	43,748,541
Per head of mean population	...	10.5	9.8	9.5	8.8	10.0

1. This excludes South Australia in 1906, for which no figures of production were available.

5. **Total Dairy Production.**—The total dairy production of the Commonwealth in 1910 is shewn below :—

**TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1910.**

Where Produced.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
<b>MILK.</b>							
On Dairy & other Farms	gallons. 235,577,702	gallons. 196,674,373	gallons. 87,648,322	gallons. 34,672,756	gallons. 5,125,124	gallons. 13,300,000*	gallons. 572,998,277
<b>BUTTER.</b>							
In Factories ...	lbs. 71,390,099	lbs. 65,063,516	lbs. 29,058,740	lbs. 6,720,630	lbs. 213,697	lbs. 1,789,982	lbs. 174,227,664
On Dairy & other Farms	5,234,731	5,540,271	2,199,593	3,996,836	641,491	1,585,000*	19,197,922
Total ...	76,624,830	70,603,787	31,258,333	10,717,466	855,188	3,365,982*	193,425,606
<b>CHEESE.</b>							
In Factories ...	lbs. 3,080,885	lbs. 2,707,630	lbs. 4,018,898	lbs. 1,788,280	lbs. ...	lbs. 464,781	lbs. 12,060,474
On Dairy & other Farms	2,110,204	1,823,263	127,763	8,001	3,306	404,000*	4,476,537
Total ...	5,191,089	4,530,893	4,146,661	1,796,281	3,306	868,781*	16,537,011
<b>CONDENSED OR CONCENTRATED MILK.</b>							
In Factories ...	lbs. 1,940,481	lbs. 2,707,110	lbs. 7,843,670	...	...	...	lbs. 12,491,261
<b>BACON AND HAM.</b>							
In Factories ...	lbs. 10,183,441	lbs. 13,455,397	lbs. 9,916,051	lbs. 2,656,147	lbs. ...	lbs. 613,789	lbs. 36,824,825
On Dairy & other Farms	2,436,626	2,983,410	842,912	1,085,795	121,154	855,000*	8,324,927
Total ...	12,620,067	16,438,837	10,758,963	3,741,942	121,154	1,468,789*	45,149,752

\* Estimated.

## § 4. Poultry Farming.

1. **Development of the Industry.**—Until recently, poultry farming as a well organised industry could scarcely be said to exist, although both in metropolitan and country districts poultry has of course long been kept for the table and egg supplies. The aggregate output, though considerable, represented relatively little value beyond the cost of production, owing to imperfect management. Many farmers however, both wheat-growers and dairymen, have maintained a large poultry stock, erecting poultry yards constructed on modern principles, and feeding from the stubble fields and waste grain with a minimum expenditure in tending. This brought about a considerable addition to the net agricultural or dairying return. The poultry industry during recent years has assumed an independent position among rural industries, notwithstanding that large numbers of poultry runs on wheat and dairy farms are still maintained; poultry farming is also carried on in conjunction with pig farming. In special poultry farms, breeding on scientific principles and a proper arrangement of the runs is secured, feeding and reproduction are technically attended to, and proper shelter is provided either by means of trees or sheds. Poultry experts are engaged by the State Governments to instruct in matters that will amplify the returns. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding. Egg collecting circles have been formed in some country districts, to develop, under Government supervision and with Government aid until the organisation is self-supporting, the industry on co-operative lines. A member of the circle is elected to act as secretary, and he receives all the eggs from the members, tests, packs, and forwards them

to the metropolitan depôt for shipment. Only clean and fresh eggs are to be delivered to the secretary under penalty of fine and expulsion from the circle. Another method of collecting and marketing the eggs is through the local butter factories, where eggs are delivered by the suppliers of milk and cream a number of times each week.

2. **Production of Poultry.**—Figures for the yield of poultry products are difficult to obtain. The following values are returned :—

**ESTIMATED VALUE OF POULTRY AND EGGS, COMMONWEALTH,  
1908-9, 1909-10 and 1910-11.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1908-9 ...	1,202,000	1,547,000	*	399,349	133,544	*	3,281,893†
1909-10 ...	1,309,000	1,570,000	185,000	431,575	160,562	*	3,656,137‡
1910-11 ...	1,170,000	1,592,000	204,000	496,311	168,251	227,000	3,857,562

\* Not available. † Excluding Queensland and Tasmania. ‡ Excluding Tasmania.

3. **Oversea Trade in Poultry Products.**—The imports and exports of eggs shew a considerable balance on the side of imports in each of the years 1901 to 1906 and in 1909 and 1910. In 1907 the export greatly exceeded the import, and in 1908 the imports were greater in quantity, but less in value, than the exports. In 1909 and 1910, the balance, both in number and value, was on the side of imports. The figures for frozen poultry indicate that a considerable oversea trade is carried on.

**IMPORTS, EXPORTS, AND NET EXPORTS OF EGGS AND LIVE AND FROZEN POULTRY,  
COMMONWEALTH, 1906 to 1910.**

Particulars.			1906.	1907.	1908.	1909.	1910.
<b>EGGS.</b>							
Imports ...	...	... doz.	83,925	60,114	31,247	38,931	39,330
" ...	...	... £	2,184	1,791	856	1,007	1,111
Exports ...	...	... doz.	38,090	88,684	17,261	10,527	3,853
" ...	...	... £	1,718	3,421	1,082	713	326
Net exports <sup>1</sup> ...	...	... doz.	—45,835	28,570	—13,986	—28,404	—35,477
" " ...	...	... £	—466	1,630	226	294	785
<b>LIVE POULTRY.</b>							
Imports ...	...	... No.	3,220	2,883	2,372	1,862	1,274
" ...	...	... £	1,747	957	633	944	663
Exports ...	...	... No.	2,806	3,280	2,290	4,708	3,251
" ...	...	... £	1,767	1,248	1,043	1,475	1,057
Net exports <sup>1</sup> ...	...	... No.	—414	397	—82	2,846	1,977
" " ...	...	... £	20	291	410	531	394
<b>FROZEN POULTRY.</b>							
Imports ...	...	... lbs.	8,949	1,452	2,242	3,565	4,811
" ...	...	... £	331	43	75	100	131
Exports ...	...	... pair	34,655	31,261	22,444	5,828	7,680
" ...	...	... £	9,506	8,556	7,335	3,127	4,171
Net exports ...	...	...	...	...	...	...	...
" " ...	...	... £	9,175	8,513	7,260	3,027	4,040

1. — signifies net imports.

2. Quantity not available.

### § 5. Bee Farming.

1. **The Bee-farming Industry.**—Bee farming, like poultry farming, has ordinarily been an adjunct to agricultural or dairying industries, and can hardly yet be said to have been organised as a distinct industry. The returns collected shew that, while production

varies greatly, there is on the whole a fair improvement, to which the large increase in the Western Australian product since 1902 has considerably contributed. The annual average returns of honey from the hives range between 20 lbs. and 600 lbs. per hive.

The value of the export of honey from Australia was only £1541 in 1907, £3361 in 1908, £2675 in 1909, and £2435 in 1910. It is believed that this export could be considerably increased. Australian honey exhibited in the Franco-British Exhibition in London in 1908, obtained the highest award. It has been proved that there is no eucalyptus flavour in Australian honey, and the prejudice against it on that account is ill-founded.

2. **Production of Honey and Beeswax.**—The particulars of honey production are as given below :—

**NUMBER OF HIVES AND PRODUCTION OF HONEY AND BEESWAX, 1908 to 1911.**

State.	Bee Hives.			Honey Produced.		Beeswax Produced.	
	Productive	Un-productive.	Total.	Quantity.	Value.	Quantity.	Value.
1908.	No.	No.	No.	lbs	£	lbs.	£
New South Wales	53,240	15,148	68,388	2,660,363	27,700	48,427	2,700
Victoria ...	27,505	15,707	43,212	1,138,992	13,050	24,521	1,330
Queensland ...	10,366	3,956	14,322	442,827	3,993	8,554	402
South Australia ...	18,529	5,101	23,630	953,305	8,938	12,854	696
Western Australia	9,881	2,140	12,021	255,489	3,726	6,454	565
Commonwealth*	119,521	42,052	161,573	5,451,066	57,407	100,810	5,693
1909.							
New South Wales	53,602	16,344	69,946	3,064,526	31,920	58,697	3,420
Victoria ...	†	†	40,595	2,373,628	26,544	38,674	1,934
Queensland ...	10,999	3,283	14,282	445,432	4,119	9,707	492
South Australia ...	19,549	4,471	24,020	1,007,717	10,497	12,063	603
Western Australia	13,928	2,631	16,559	309,109	3,122	6,217	466
Commonwealth*	†	†	165,402	7,200,412	76,202	125,358	6,915
1910.							
New South Wales	46,813	17,986	64,799	2,066,330	25,800	53,006	3,100
Victoria ...	32,914	9,718	42,632	1,611,284	18,463	22,369	1,305
Queensland ...	11,322	3,135	14,457	548,171	5,224	11,849	605
South Australia ...	17,551	6,450	24,001	812,487	8,463	10,059	503
Western Australia	10,902	2,837	13,739	409,345	4,264	9,841	574
Commonwealth*	119,502	40,126	159,628	5,447,617	62,214	107,124	6,087
1911.							
New South Wales	55,958	14,308	70,266	2,765,618	37,700	72,617	3,700
Victoria ...	37,541	15,221	52,762	2,308,405	24,046	34,695	1,880
Queensland ...	11,271	4,104	15,375	517,565	5,100	11,798	595
South Australia ...	22,786	5,204	27,990	996,376	10,379	10,608	552
Western Australia	8,686	1,934	10,620	338,507	4,231	7,215	541
Commonwealth*	136,242	40,771	177,013	6,926,471	81,456	136,933	7,268

\* Exclusive of Tasmania.

† Not available.

3. **Oversea Trade in Bee Products.**—Both honey and beeswax are produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity of each is sent oversea.

**IMPORTS, EXPORTS, AND NET EXPORTS OF HONEY AND BEESWAX,  
COMMONWEALTH, 1906 to 1910.**

Particulars.				1906.	1907.	1908.	1909.	1910.
HONEY.								
Imports	...	...	... lbs.	2,618	2,716	9,315	9,842	872
"	...	...	... £	27	35	98	249	23
Exports	...	...	... lbs.	58,297	102,047	226,465	168,953	182,083
"	...	...	... £	1,001	1,541	3,361	2,675	2,439
Net Exports	...	...	... lbs.	55,679	99,331	217,150	159,111	181,211
" "	...	...	... £	974	1,506	3,263	2,426	2,416
BEESWAX.								
Imports	...	...	... lbs.	13,725	14,070	7,527	19,041	7,821
"	...	...	... £	787	978	460	1,112	505
Exports	...	...	... lbs.	30,570	27,086	41,177	35,540	26,408
"	...	...	... £	1,768	1,618	2,479	2,064	1,587
Net Exports	...	...	... lbs.	16,845	13,016	33,650	16,499	18,587
" "	...	...	... £	981	640	2,019	952	1,082

**§ 6. Summary of Australian Farmyard and Dairy Products.**

The value of the principal farmyard and dairy products raised in the Commonwealth in 1910 was:—

**VALUE OF THE PRINCIPAL FARMYARD AND DAIRY PRODUCTS IN THE SEVERAL  
STATES OF THE COMMONWEALTH DURING THE YEAR 1910.**

Produce.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Milk, consumed as							
subh ...	564,606	548,876	134,162	125,000	58,529	66,889	1,498,062
Butter ...	3,391,255	3,108,960	1,333,858	494,934	42,908	147,897	8,519,812
Cheese...	126,390	113,790	93,001	38,532	96	17,530	389,339
Condensed & concentrated milk	26,676	45,000	136,379	...	...	...	208,055
Bacon and ham ...	382,266	550,351	329,710	118,301	4,291	50,669	1,435,588
Poultry and eggs	1,170,000	1,592,000	204,000	496,311	168,251	227,000	3,857,562
Honey and wax ...	41,200	25,926	5,695	10,931	4,772	3,640	92,164



## § 7. Summary of Australian Farmyard and Dairy Products Exported, 1906 to 1910.

The quantities and values of Australian farmyard and dairy products exported from the Commonwealth during each of the years 1906 to 1910 are shewn below :—

### QUANTITIES OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1906 to 1910.

Products.	1906.	1907.	1908.	1909.	1910.
Beeswax ... .. lbs.	30,471	27,058	41,177	35,540	26,408
Butter ... .. "	75,765,536	66,076,915	51,193,311	55,644,925	87,894,943
Cheese ... .. "	246,631	491,209	131,001	193,204	911,760
Eggs, albumen and yolk ... .. *					
Eggs ... .. doz.	37,900	88,615	17,113	10,359	3,753
Feathers, undressed ... .. *					
Honey ... .. lbs.	58,297	102,047	226,465	168,953	182,023
Lard ... .. "	550,021	458,059	511,016	1,617,442	3,105,307
Meats—					
Bacon and ham ... .. "	530,459	415,251	389,718	396,342	1,604,362
Frozen poultry ... .. pair	33,833	31,261	22,444	5,828	7,650
" pork ... .. lbs.	3,472,224	1,446,758	826,102	394,559	741,410
Milk, concentrated and preserved ... .. "	171,639	162,367	139,165	169,310	266,904
Pigs, living ... .. No.	220	185	117	229	303
Poultry, living ... .. "	2,806	3,280	2,290	4,708	3,251

\* Quantity not available.

### VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1906 to 1910.

Products.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£
Beeswax ... .. "	1,761	1,617	2,479	2,064	1,587
Butter ... .. "	3,238,304	2,890,261	2,386,548	2,399,693	3,951,131
Cheese ... .. "	6,662	12,733	4,305	5,337	21,730
Eggs, albumen and yolk ... .. "			535	4	724
Eggs ... .. "	1,710	3,419	1,074	706	320
Feathers, undressed ... .. "	1,002	2,610	2,636	2,244	2,021
Honey ... .. "	1,001	1,541	5,361	2,675	2,435
Lard ... .. "	8,346	8,547	10,884	28,876	62,474
Meats—					
Bacon and ham ... .. "	18,374	17,348	18,258	18,682	56,995
Frozen poultry ... .. "	9,291	8,556	7,335	3,127	4,171
" pork ... .. "	60,936	28,406	20,446	9,518	17,087
Milk, concentrated and preserved ... .. "	3,386	2,924	3,139	3,319	4,866
Pigs, living ... .. "	263	383	297	460	477
Poultry, living ... .. "	1,767	1,248	1,043	1,475	1,067
Total ... .. "	3,352,803	2,979,593	2,462,340	2,477,980	4,127,074

## § 8. British Imports of Dairy Products.

1. Value of Britain's Imports of Dairy Products.—Great Britain has paid annually since 1901 considerably more than £20,000,000 for imported butter, the value of the import in 1908, 1909, and 1910 being £24,081,000, £22,425,000, and £24,493,000 respectively; for imported cheese the amounts in the years named were respectively

£7,183,000, £7,234,000, and £7,296,000; for bacon and ham, £17,565,000, £16,914,000, and £15,918,000 respectively; and for pork, £1,660,000, £1,336,000, and £1,500,000 respectively.

2. **Butter.**—Australia in 1910 stood second in the value of butter imported into the United Kingdom, but the import of other Australian dairy products was inconsiderable.

#### IMPORTS OF BUTTER INTO THE UNITED KINGDOM, 1910.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Denmark ...	1,726,091	10,208,192	Argentine Republic	65,944	374,285
Australia ...	667,966	3,566,952	Norway... ..	22,081	127,003
Russia ...	584,040	3,045,722	Canada ...	16,805	90,797
New Zealand ...	362,674	2,001,393	Other Countries ...	18,468	97,318
France ...	361,249	2,116,072			
Sweden ...	345,684	2,022,398			
Netherlands ...	154,537	843,318	Total ...	4,325,539	24,493,450

In October, 1907, a falling-off of imports of Australian butter into Great Britain was noticed, with the result that, three months later, there was a heavy shortage, and a "butter boom" ensued in London, prices rising rapidly, until a limit was reached with 156s. per cwt., the highest recorded for Australasian butter. After a short period of high values in February, 1908, prices steadied at 116s., and then gradually fell to 104s. in the middle of May, when European grass-fed butter was ready for the British market. Prices in London in 1909 and 1910 were of higher average than in any previous year since the Australian export trade was instituted twenty years ago.

3. **Cheese.**—The value of the British cheese import in 1910 was £6,800,000, of which four and a half million pounds' worth was received from Canada. The import from Australia was practically *nil*. Small experimental shipments were, however, made in 1908, 1909 and 1910, and a fair price was realised.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1910 at £15,918,000, Great Britain received goods to the value of £6,783,000 from the United States; £6,360,000 from Denmark; and £1,588,000 from Canada. The British import from Australia was small, but experimental shipments have been made during recent years.

5. **Pork.**—The total value of British imports of pork (including refrigerated, frozen and salted) was £1,500,000 in 1910. Of this the value of Australian produce was *nil*, whilst from the Netherlands pork valued at £900,000 was imported.

6. **Other Products.**—There is practically no British import from Australia of honey, beeswax, poultry, game, lard, or eggs, but rabbits to the value of £568,000 were received from the Commonwealth in 1910.

### § 8. Graphical Representation of Dairy Production.

Two graphs shewing respectively the increase in dairy production and in the exports of butter will be found on page 358.

## SECTION X.

## FORESTS, FORESTRY, AND FORESTAL PRODUCTS.

## § 1. The Forests of Australia.

1. **Extent of Forests.**—Although no definite survey of forest lands has been made on a uniform basis for the different States of Australia, the following table gives the results of careful estimates made for each State:—

## FOREST RESERVES AND FOREST AREAS, STATES AND COMMONWEALTH, 1910.

State.	Specially Reserved for Timber.	Total Forest Area.	Percentage of State Area.		Percentage of Commonwealth Area.	
			Specially Reserved	Total Forest.	Specially Reserved	Total Forest.
	Acres.	Acres.	%	%	%	%
New South Wales	7,660,496	15,000,000	3.86	7.55	0.40	0.78
Victoria ...	4,160,342	11,800,000	7.40	20.98	0.22	0.62
Queensland ...	3,629,328	40,000,000	0.85	9.32	0.19	2.10
South Australia ...	147,084	3,800,000	0.03	0.66	0.01	0.20
Western Australia	11,148,487	20,400,000	17.85	3.27	0.58	1.07
Tasmania ...	* 1,000,000	11,000,000	5.95	65.56	0.05	0.58
Commonwealth	27,745,737	102,000,000	—	—	1.45	5.35

\* Approximate.

The actual area of wooded land is probably in all cases much greater than shewn above. For example, that of Western Australia is estimated at 97,900,000 acres; Queensland has probably 143,000,000 acres; and Victoria has a considerable extent of "Mallee" country not included in the above estimate. The basis of estimation for each State in any case cannot be regarded as quite identical. Considerable areas not included as forest lands possess timber of local value.

The absolute and relative forest areas of Australia and other countries are shewn in the table on the next page.

In each of the States areas have been set apart as State forests and "timber reserves," in some cases the reservation being made in perpetuity, in others for a definite period, in others again the reservation may be cancelled at any time. The characteristics of the forest areas of the different States are referred to seriatim.

## RELATIVE AREAS OF FOREST LANDS, AUSTRALIA AND OTHER COUNTRIES, 1910.

Country.	Total Forest Area.	Percentage of Total Area.	Country.	Total Forest Area.	Percentage of Total Area.
	Sq. Miles.	%		Sq. Miles.	%
<b>Commonwealth</b> ...	<b>159,375</b>	<b>5.35</b>	Rumania ...	4,312	8.50
New Zealand ...	26,678	25.65	Sweden ...	90,241	52.20
United Kingdom ...	4,800	3.96	Norway ...	26,685	21.50
France ...	36,005	17.58	Russia in Europe	859,375	43.04
Algeria ...	10,249	2.98	United States ...	860,000	24.08
Germany ...	54,015	25.90	Canada ...	836,000	22.33
Switzerland ...	3,290	20.60	Cape Colony ...	537	0.19
Italy ...	15,796	14.29	British India ...	128,890	11.74
Austria ...	37,700	31.66	Japan ...	28,450	19.00
Hungary ...	16,475	17.90			

2. **Characteristics of State Forest Areas.**—(i.) *New South Wales.* Great diversity exists in the more dense distribution of timber trees in the coastal region, between the Great Dividing Range and the Pacific Ocean. The areas of natural forest, however, are found in nearly every part of the State except the wide plains of the Murrumbidgee, Lachlan, and Darling districts, the level surface of which is chiefly covered with salt bush, scrub, and indigenous grasses, while the tree-growth is, as a rule, confined to belts of red gum, box, sheoak, and myall along the courses of the rivers and their tributaries, and to groves of cypress pine at intervals. The tree-clad regions of the State may be divided into open, brush, and scrub forests. The first class has the widest distribution, being found in every geological formation, and including some of the finest timbers, such as many species of eucalyptus, angophora, and other genera of the natural order of myrtles. Among the hardwoods, red gum usually marks the courses of streams, while on the rough and stony mountain and hill ridges, with their sheltered gorges, are found several varieties of ironbark, blackbutt, tallowwood, spotted gum, grey box, red mahogany, forest red gum, Sydney blue gum, and turpentine. The brush or jungle forests occupy a considerable tract of country between the Dividing Range and the coast. In this region, interspersed occasionally with large Moreton Bay, and other figs, fern trees, cabbage trees, and palms, grow some of the most beautiful timbers known for cabinet work and veneers, such as the red cedar, rosewood, silky oak, beech, red bean, beefwood, tulipwood, and coachwood. In addition to these, there are considerable supplies of the colonial or hoop pine, and the brown or berry pine. The scrub forests are represented by the red or black and white varieties of the cypress pine, and many species of acacia and eucalyptus. These are chiefly situated in the western portion of the State, and although the pines and some of the eucalypts are useful for local building and fencing, the bulk of the timber is of little commercial value.

(ii.) *Victoria.* The mountain ranges, principal of which are the Dividing Range and the Australian Alps, constitute the true forest regions of the country, the trees attaining considerable height and girth, and the brush or scrub growth great luxuriance. The lower elevations of the ranges, remote from settlement, are densely wooded to their summits, but the peaks above the winter snow-line are either bare or covered only with dwarfed vegetation. Dense and luxuriant forests characterise the Otway Ranges and Gippsland, south of the Main Divide. The tree-growth in the Grampians consists chiefly of stringy-bark, white gum, grey and yellow box, and white ironbark, with some red gum and wattle. In the Pyrenees there are more valuable hardwoods, chiefly blue gum and messmate, with stringy-bark, grey and yellow box, red and white ironbark on the lower levels. In Wombat Forest, extending along both sides of the Dividing Range

from Creswick to Mount Macedon, the timber is almost wholly young messmate of good quality, with peppermint and swamp gum. Further eastward along the range messmate and stringy-bark prevail, with grey and yellow box and ironbark on the low country. In Delatite, and in the lower ranges of the Australian Alps generally, the timber increases in height and girth, and includes blue gum, messmate, and peppermint of fine quality, with ribbon gum, woollybutt, and silvertop on the higher levels, and grey and yellow box with stringy-bark along the lower slopes and valleys. The northern plains, extending westward from Wodonga to the Grampians, are thinly covered with open forests, the limits of the prevailing trees being defined in clearly-marked belts. Thus the main belt of red gum follows the course of the Murray and extends along the valleys of its tributaries, but is interspersed at intervals near the river with sand ridges bearing grey box and cypress pine. Southward of this belt, and between the streams, the prevailing trees are grey or yellow box, with red and white gum and stringy-bark on the low ridges. From Chiltern a line drawn westward through Rushworth, Heathcote, Bendigo, Dunolly, and St. Arnaud marks a long belt of ironbark, of both red and white varieties, interspersed with stringy-bark and grey or yellow box. In the north-west, between the Wimmera Plains and the Murray, the dwarf eucalypt known as the mallee scrub covers the plains, with belts of cypress pine at intervals, and red gum and box along the courses of streams and lakes. The south-west is poorly timbered, the prevailing tree being stringy-bark, with red gum along the streams, and white gum, box, lightwood, and honeysuckle on the plains and undulating country. In the Otway district are valuable timber forests; over 280 square miles are covered with blue gum, spotted gum, messmate, and mountain ash or blackbutt of fine quality, with some stringy-bark and white gum, while the valleys between the ridges bear valuable timber of fine grain such as blackwood, beech, satin box, olive, sycamore, and pencil cedar. Eastward of Melbourne, on the watershed of the Yarra, there is another fine forest region, the trees consisting of spotted gum, mountain ash, messmate, and white gum, with blackwood, beech, sassafras, and silver wattle in the valleys. The ranges of Southern Gippsland bear blue gum, spotted gum, mountain ash, and yellow stringy-bark, while in the western and northern portions of the same district grow the mountain stringy-bark, spotted gum, blackbutt, and the Gippsland mountain ash or silvertop, with woollybutt and ribbon gum on the higher elevations of the Main Divide. In the eastern part of the district, stretching from the Lakes towards the Genoa River, are found the Bairnsdale grey box, the Gippsland mountain ash or silvertop, white and yellow stringy-bark, red ironbark and bloodwood. The prevailing timber in this part of Gippsland is the white stringy-bark, which forms large forests from the foothills of the Divide to the sea-coast.

(iii.) *Queensland.* The extensive forests of Queensland yield a great variety of woods, esteemed for their strength, durability, and beauty. The principal merchantable timbers lie between the eastern seaboard and the Great Dividing Range, which runs roughly parallel to, and about 200 miles from, the coast. At about the 21st parallel of south latitude, a spur runs westward nearly to the South Australian border, and bears on its crests and slopes much valuable timber. Forests are also found on the Denham, Johnstone, and Gilbert Ranges. The principal eucalypts are ironbark, grey, spotted, and red gum, blackbutt, and turpentine; Moreton Bay, brown, and Bunya Bunya pines represent the conifers; and red cedar, beech, tulipwood, rosewood, red bean, and black bean are among the brush timbers of fine grain. On the extensive plateaux west of the Divide there is but little timber; and towards the vast basin of the interior, the low ridges and banks of the short water-courses bear a growth of stunted eucalypts such as the gimlet gum, the desert sheoak, acacias, and mallee.

The chief supply of mill timber (eucalypts, Moreton Bay pine, etc.) is in the southern coastal region, from the New South Wales border as far north as Gladstone. In the regions between Rockhampton and Ingham the supply is not so plentiful; but northward of the latter town, the red cedar, kauri pine, and black bean are luxuriant. Large

supplies of these valuable trees are found on the Barron Valley reserves, and in other localities between Ingham and Port Douglas. Inland from this zone of heavy forest is another, less densely timbered, bearing cypress and other pines, ironbarks and acacias. In the south-western regions of the State the cypress pine flourishes.

(iv.) *South Australia.* The principal forest districts of South Australia proper are restricted largely to the hill ranges in the neighbourhood of Adelaide and Spencer Gulf. The trees, however, have not the fulness and lofty growth of those of the eastern and south-western borders of Australia. Red gum is widely distributed, though never far from water; and there are belts of timber where, from the general appearance of the surrounding country, they would hardly be expected. The stringy bark has its habitat principally in the hills, and is but rarely seen on the plains; other useful hardwoods are the white and blue gum and peppermint. Blackwood (in demand for cabinet work) is common in the south-east and along the eastern border, but is rare near Adelaide. Wattle also is cultivated for its gum and bark. Sheoak appears in districts less thickly forest-clad, and ti-trees inhabit low, damp situations. The sandalwood trees grow luxuriantly in Yorke Peninsula. On the great plains of the interior there is little vegetation, patches of forest country being occasionally found, while here and there fertile spots of grass land, but generally not of large extent, are met with. Groups of stunted shrubs, and small scattered trees—sheoak, eucalyptus, and wattle—mostly of limited extent, rise from the plains like islands.

(v.) *Northern Territory.* In Central and Northern Australia there is little forest, until the hills where the waters of the northern river system take their rise are encountered. On the plains to the north of the McDonnell Ranges there is a thin clothing of mulga scrub, with gum trees marking the water-courses. Occasionally patches of heavier gum forests are met with. Stirling Creek is lined with the bean tree. The mulga scrub thickens, and with stunted and mallee gums furnishes a uniform vegetation as far north as Powell's Creek. Here, with red gums still lining the water-courses and flooded gums on the flats, the vegetation becomes more varied. On the ranges pines, fig trees, and orange trees (*Capparis*) occur. Heavy timber clothes the uplands about the Roper River, and the tableland which stretches across the territory at a distance from the coast of from 30 to 100 miles bears large paperbark trees, Leichhardt pines, and palms. On the higher steppes there is also abundance of bloodwood and other varieties of eucalyptus, besides other kinds of trees. Many prominent fibre plants are native to the territory.

(vi.) *Western Australia.* The coastal timber belt runs along the western shore from the Murchison River to the Leeuwin, and along the southern shore from that point to beyond Albany, clothing with trees the Victoria, Herschel, Darling, and Stirling Ranges. Pre-eminent among the trees of this State for strength and durability are the jarrah and karri. A great belt of the former stretches eastward of the Darling Range to upwards of 100 miles in breadth, with a length of 350 miles. Between this region and the coast are two well-marked belts of tuart and red gum. In the extreme south-west of the State the main karri belt stretches from Augusta to Albany. Eastward of the jarrah belt a strip of white gum encloses a narrow belt of York gum, its southern extremity almost reaching the coast, while its northern limit extends even beyond that of the jarrah tract. Still further east the forest thins, a poorer growth of white gum giving place to brushes, scrub, and dwarf trees. Along the shores of the Great Australian Bight there are stunted eucalypts, with casuarinas and wattle. In the north-west, on the King Leopold and St. George's Ranges, there are forest areas, but from Dampier Land to below Shark Bay there is no coastal forest, and in many cases the stunted bush and scrub lands infringe on the sea-coast.

(vii.) *Tasmania*. The Tasmanian forest consists chiefly of eucalypts, widely distributed over the island; and of conifers, such as the Huon, the King William, and the celery-top pines, flourishing in the western and southern parts. The principal hardwoods of the eucalypt family are the blue gum, stringy bark, peppermint, and silvertop iron-bark, while among woods of fine grain are the blackwood, beech or myrtle, sassafras, native cherry, and sheoak. Black and silver wattles also flourish in various parts of Tasmania.

**3. Distribution of Timber in the Commonwealth Generally.**—The more conspicuous timber regions of Australia as a whole are the eastern and southern portions, including Tasmania, and, again, the south-western portion northwards and eastwards from Cape Leeuwin. In regard to distribution, on the eastern side of the continent the largest timber is found on the crests and coastal slopes of the mountain ranges, but in the south-west, in addition to the vegetation between mountains and sea, a large area of forest stretches inland from the coastal ranges. The hills encircling Adelaide and Yorke and Eyre Peninsulas also bear good forest. The Kimberley district is timbered, and in the Northern Territory and round the shores of the Gulf of Carpentaria there are considerable forest areas. But the coastal regions of West and North-west Australia, except in the case of the districts named, and the shores of the Great Australian Bight and Encounter Bay, are devoid alike of mountains and forests. The interior of the continent is thinly timbered, or almost destitute of vegetation, an occasional limited area of forest, generally in connection with mountain systems (though these themselves are scarce), acting as a relief in the landscape, which but for these presents to the eye all the features of a dreary and arid waste.

## § 2. Forestry.

**1. Objects.**—Economic forestry, aiming at the conservation of forestal wealth by safeguarding forests against inconsiderate destruction, and by the suitable re-afforestation of denuded areas, is essential to the preservation of industries dependent upon an adequate supply of timber, and to the perpetuation of a necessary form of national wealth. Though in Australia large areas of virgin forests still remain, the inroads made by timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ringbarking”—are considerable; and it is not unlikely that climatological changes are caused thereby. It is asserted that variations in climate, and alternating periods of drought and flood, desiccation and erosion of soil, with loss or diminution of fertility, have resulted from forest denudation in countries bordering the Mediterranean. In many of the States of America diminished rainfall is said to have followed the destruction of large forest areas, and in Mauritius, clearing the hills of timber destroyed the even distribution of rainfall, causing floods, and soil denudation. On the other hand beneficial consequences appear to have followed on the planting of trees on denuded lands, or along eroding coasts, and it is obvious that a forest covering tends to beneficially regulate the effects of rainfall.

Successful planting of exotics in various parts of the Commonwealth has demonstrated that the Australian climate is suitable for the cultivation of a large number of the most valuable and beautiful of the world's timber trees.

**2. Forestry Departments.**—Each State of the Commonwealth, excepting Tasmania, has organised a separate forestry department or branch of service specially charged with forestal matters. Forest improvement work is carried on, areas of young forest being cleaned up by the felling and removal of stunted, diseased and suppressed growth, the

burning of debris and the making of fire breaks. Provision is made for effective patrols in forest districts, to check the ravages caused by fires, often, it is believed, caused through carelessness. The following table gives a comparative indication of the attention paid to the subject, the particulars being those for 1910:—

### STATE FORESTRY DEPARTMENTS, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aus.	Tas.
Designation of officer in charge	Director of Forests	Conservator of Forests	Director of Forests	Conservator of Forests	Insp.-Gen. of Forests.	*
Salaries of persons engaged in administration and control	£ 2,602	£ 2,785†	7,038†	746	782	260
Salaries of technical experts, forest rangers, etc.	£ 12,682†	£ 14,540†		1,203	2,800	\$
Incidental expenses	£ 10,448	550		398	988	...
No. of persons forming office staff	14	13	4	6	5	*
No. of persons forming field staff	66	67	5	26	14	*

\* Administered by Lands Department. † Including allowances. ‡ Including proportion of salaries of Land Commissioners and Crown Land Rangers. \$ Not available.

The revenue and expenditure of the State Forestry Departments from 1906-7 to 1910-11 are given below:—

### REVENUE OF STATE FORESTRY DEPARTMENTS, 1906-7 to 1910-11.

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
New South Wales ...	50,397	56,048	57,593	66,030	87,618
Victoria ...	24,971	29,013	40,678	37,992	43,886
Queensland ...	14,560*	22,236	27,880	35,200	39,645
South Australia ...	2,981	3,474	3,416	3,089	3,756
Western Australia ...	22,783	23,500	29,484	31,549	23,985
Tasmania ...	4,220	3,841	3,871	3,840	4,366
Commonwealth ...	119,912	138,112	162,922	177,700	203,256

\* For calendar year ended previous 31st December.

### EXPENDITURE ON STATE FORESTRY DEPARTMENTS, 1906-7 to 1910-11.

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
New South Wales ...	20,259	19,545	20,169	24,510	26,695
Victoria ...	21,108	18,754	27,066	27,230	46,448
Queensland ...	6,700	6,940	4,652	5,000	8,000
South Australia ...	6,801	7,542	10,171	16,411	20,968
Western Australia ...	6,270	6,271	8,755	10,110	8,572
Tasmania ...	426	424	1,492	260	240
Commonwealth ...	61,564	59,476	72,305	83,521	110,923



3. **Sylvicultural Nurseries and Plantations.**—The growing recognition of the necessity for systematic sylviculture has led to the creation in most of the States of a number of sylvicultural nurseries and plantations.

(i.) *New South Wales.* In this State a small forest nursery is maintained at Gosford, between Sydney and Newcastle, from which young trees are widely distributed throughout the State, the bulk being issued to municipal councils and farmers, and for planting in parks, town reserves, hospital grounds, and cemeteries. Large sums have been distributed by the State in improvement fellings and the thinning out of young timber, principally in the Bogan, Narrandera, and Murray River districts. Over a quarter of a million acres of pine forest and red gum have been so treated.

(ii.) *Victoria.* In Victoria there are three forest nurseries, situated at Macedon, Creswick, and Frankston. At Macedon the arboretum contains many fine specimens of the conifers and deciduous trees of Europe, America and Asia. While the bulk of the yields are retained for the State plantations, there are considerable distributions for public parks and recreation reserves, "arbor-day" planting of streets and roads, municipal councils and water trusts, mechanics' institutes and libraries, cemeteries, State schools and other institutions, and farmers and private persons, the applications of those in dry districts receiving first consideration.

Among the principal native hardwoods raised and distributed are blue gum, sugar gum, and tallowwood, with some jarrah for the plantations; among conifers, the Monterey, Corsican, Black Austrian, Canary Island, Maritime, and Aleppo pines, the blue pine of India, the American white and yellow pines, with several spruces; and among other exotics, peppers, Indian cedars, oaks, elms, planes, silver poplars, sycamores, and chestnuts. Great success has attended the establishment of a new nursery for conifers at Creswick.

The principal forest plantation is along the lower slopes of the You Yangs, near Geelong, where about 1000 acres have been enclosed and planted with eucalyptus and conifers. Good results have attended the cultivation of the broad leaf and feather leaf wattles.

At another plantation, viz., at Sawpit Gully, among the foothills of the Dividing Range, near Creswick, conifers are chiefly grown. Minor plantations of blue gum and sugar gum are established at Havelock and Majorca, near Maryborough; and at Mount Macedon, the principal species of oak, elm, ash, plane, sycamore, pine, spruce, eucalyptus, and willows are planted. During 1909 additional planting of conifers was carried out at Creswick, Frankston, and Warrnambool, and a large area was sown with tan-yielding wattles at You Yangs.

The principal work in forest reserves and plantations is improvement thinning and felling, planting, fencing, and construction of dams. The planted area of some of the older plantations has been enlarged.

Officers of the Lands and Forest Departments have made joint inspections of portions of reserved forests, to discover what areas, suitable for settlement, can be excised from the forest and made available. As a result, the forests will suffer a further loss of 20,000 acres. The officers have also recommended the addition of large areas to the State reserves.

Recent legislation makes provision for the stricter control of grazing in forests, and for more efficient protection from fire.

(iii.) *Queensland.* In Queensland there is a forest plantation of 500 acres. The questions of replanting and further reservation have lately been attracting attention, and the prominence given to them will probably greatly influence forest policy.

(iv.) *South Australia.* In this State there are several plantations, the most important being at Bundaleer (7337 acres) and Wirrabarra (3633 acres), situated some 150 and 190 miles respectively to the north of Adelaide in the direction of Spencer Gulf. The total area of the enclosures for planting and natural regeneration of the indigenous timber was, on 30th June, 1910, 14,898 acres. Of the reserved area, about one-fifth only, it is said, ever bore timber of commercial value, the remainder having been covered for the most part with stunted vegetation. Owing to the absence of high mountain ranges and dryness of the climate, the forests are not dense. Special attention has been given in South Australia to silviculture, and great success has been achieved in clothing areas of treeless plain and hillslope with belts of young trees, such as blue, sugar and red gum, and white ironbark. In some parts the Tasmanian blue gum (*E. globulus*) flourishes, but great success has also been attained with the sugar gum (*E. corynocalyx*), a tree indigenous to the State itself. It is found chiefly in the Flinders Range, and used for railway sleepers, telegraph poles, coachbuilding, and in wharf and jetty construction. Two other eucalypts found in South Australia, the white ironbark (*E. leucoxylon*), known locally as "blue gum," and the grey box (*E. hemiphloia*) furnish strong, tough, and durable timber, inlocked in grain and suitable for the same purposes as sugar gum. The common flooded variety of red gum, which has a fairly wide distribution, being found on clay flats and along streams and water-courses, has also been grown in the plantations, but not with the same success as sugar gum. Among conifers which have been grown with fair success are the Monterey, the Maritime, Aleppo, and Stone pines. The Monterey pine (*P. insignis*) outstrips all other trees in growth, and its timber, though softer than other first-class pines, has been utilised for deal tables, packing cases, picket fencing, shelving, and generally for purposes where common deal is useful. The Maritime, Aleppo, and Stone pines are naturally of slower growth. In Europe they furnish useful timber, but in these plantations have not yet reached an age suitable for utilisation. The upright poplar (*P. fastigiata*) growing well over a large area, serves for packing cases, flooring boards, etc. The locally-grown American ash (*Fraxinus americana*) has been used in coachbuilding work, and compares well in quality with the imported American ash. The area suitable for its cultivation in South Australia is, however, very limited, as it requires favourable conditions of soil and climate.

During the last twenty-eight years the Forest Department has issued very large numbers of young plants to the public free of charge, for wind breaks, avenues, and for the shelter of homesteads and buildings generally, over seven million trees having been so distributed. Formerly, bounties were paid under the Forest Act for the encouragement of private planting of timber trees.

A substantial increase in the amounts voted for recent years has enabled great progress to be made in planting forest reserves, and a much larger area is now planted than has been the case for many years past. It is anticipated that on completion of the planting season nearly a thousand acres will have been planted. Plans have been prepared for re-forestation by natural regeneration of a large area in the Penola State forest, under a thorough system of fire protection.

(v.) *Western Australia.* A State silvicultural nursery is established at Drake's Brook, on the south-western railway, the site chosen being a ti-tree swamp, exotic trees of temperate climates being raised. The planting of the Monterey, Maritime, Aleppo, and Canary Island pines, the blue pine of the Himalayas (*P. excelsa*), the Indian cedar, Lawson's cypress, several kinds of poplar, the Virginian catalpa, white cedar, and American ash has been successful. A large number of pepper trees and sugar gums were raised, chiefly for shade purposes. The trees are sold or given away to settlers, being distributed chiefly in the goldfields region and other districts with little natural forest.

There are also two forest plantations where conifers, acacias, and sandalwood are cultivated, the trees making very healthy growth.

(vi.) *Tasmania*. There are at present only two small experimental plantations. In the State nursery a considerable area is being planted with softwoods.

Particulars regarding nurseries and plantations in 1910 are given hereunder:—

#### SYLVICULTURAL NURSERIES AND PLANTATIONS, 1910.

Particulars.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.
Expenditure on plantations and upkeep of silvicultural nurseries	£964	£14,367	nil	£18,621	£2900	£200
No. of persons engaged in nurseries	11	20	nil	20	4	2
No. of silvicultural nurseries ...	1	3	nil	7	1	1
Area of silvicultural nurseries ...	85 ac.	54 ac.	nil	7 ac.	17 ac.	1½ ac.
No. of forest plantations ...	3	10	1	107	2	2
Area of forest plantations ...	180 ac.	15570 ac.	500 ac.	9684 ac.	300 ac.	2 ac.
Extent of public distribution of trees or number of trees issued ...	39,000	27,000	*	300,000	82,000	1000

\* There are no forest nurseries issuing trees in Queensland, but a small number of economic and ornamental trees are issued by the Department of Agriculture.

4. **A Forestry School.**—A suitable building, with adequate grounds, has been established at Creswick, in Victoria, as a School of Forestry. The site is near the State plantation and nursery. General class-teaching is given at the school, but the principal aim of the Forest Department is to keep practical work in the foreground. The principal class subjects, in addition to theoretical forestry, are botany, geology, physics, and land surveying, while in outside work trainees will have regular teaching and experience in the preparation of seed-beds, seed-sowing, propagation, planting out, pruning, the general care and improvement of plantations and natural forests, and the employment of timber to the best advantage. The desire is to catch the prospective forester young and give him a thorough training in all branches of the work. Facilities are also afforded to members of the present forests staff to qualify in special subjects by attending winter classes. The school was opened early in 1911.

In September, 1910, an Instructor of Forestry was appointed by the South Australian Government, to assist the Conservator in forest inspection, and particularly to conduct a course in forestry at the Adelaide School of Mines.

### § 3. Commercial Uses of Principal Australian Timbers.

The uses of the more important of Australian timbers are many and various. Four varieties of ironbark, viz., white or grey (*E. paniculata*), narrow-leaved (*E. crebra*), broad-leaved (*E. siderophloia*), and red (*E. sideroxylon*) are largely used for public works, preference being given to the white and narrow-leaved varieties. These timbers are used extensively in the building of bridges and culverts, for railway sleepers and fencing posts, and for framing, naves, spokes, poles and shafts in carriage and waggon building. Ironbark beams are of great strength, hence it is largely employed for girders and joists of upper floors, especially in stores for heavy goods.<sup>1</sup> Another red ironbark (*E. leucoxyton*), heavy, dense, and strong, is greatly valued for bridge beams and piles. Tallowwood (*E. microcorys*) is strong, heavy, very durable, not easily split, and turns and planes well. It

1. Ironbark girders do not burn rapidly and often stand a fire when iron girders yield through the effect of the heat.

is used for bridge-decking, house-flooring (being peculiarly suitable for ballrooms), girders, piles, and fencing posts, and especially for paving blocks, giving even and regular wear under heavy traffic. Even better in this latter regard is blackbutt (*E. pilularis*), a fine hardwood for house and ship building, as well as street paving. Grey gum (*E. propinqua*), makes excellent railway sleepers, and is used for felloes and spokes in coach building. It makes very durable fencing posts, and is also sometimes split for shingles. Murray red gum (*E. rostrata*), the common river gum of all the eastern States, is one of the best hardwoods for use in contact with the ground, being largely used for poles, house foundations, wood paving, and railway sleepers. It is also extensively cut for mining shafts and public and municipal works. The forest variety of red gum (*E. terebinthifolia*) serves the same purpose as the river red gum. White mahogany (*E. acmenoides*) is used for posts, poles, girders, and similar classes of work, being an exceedingly durable timber. Red mahogany (*E. resinifera*) is largely employed for general building work, street paving, fencing, and weatherboards. It is very durable and hardens greatly with age. Grey box (*E. hemiphloia*) is very durable in contact with the ground, and is hence used for railway sleepers (lasting from thirty to thirty-five years in the track), telegraph poles, mine props, fence posts, piles, girders, and for heavy framing and naves, wheel cogs, shafts, dray poles, spokes, etc. Bairnsdale grey box (*E. bosistoana*) serves similar purposes. Brush box (*Tristania conferta*), another hard and durable wood, is used for tram rails, bullock yokes, tool handles, planes, etc. Sydney blue gum (*E. saligna*) is greatly valued by shipwrights and wheelwrights, and furnishes ships' planks, felloes of wheels, etc. It is also used for buildings, and makes very durable paving blocks. Woollybutt (*E. longifolia*) is used for house building, fencing, felloes, spokes, and wheelwrights' work generally. Being durable in contact with the ground, and resistant to heavy traffic, it is also used for street paving. Spotted gum (*E. maculata*) is one of the best hardwoods for bending, even when cold, and is therefore specially valuable in wheelwrights' and coachbuilders' work for poles, shafts, crosspieces, naves, and spokes; also for framing and house building, tram rails, ship planking, decking of bridges, and wood paving. Turpentine (*Syncarpia laurifolia*) is of great durability in the ground or under water, being used for piles or jetties, wharves, bridges, pillars and girders of buildings, wood paving, and hewn posts and rails. Yellow stringy-bark (*E. muelleriana*) is chiefly used for jetty and pier work, and for fencing posts. Blue gum (*E. globulus*) is a valuable timber with straight, symmetrical bole, used for upper timbers and decking in jetty and bridge work, bridge piles, shafts, felloes, spokes and frame work of vehicles, and in general building and construction. Spotted gum (*E. goniocalyx*) furnishes a hard, heavy, and durable timber, similar in appearance to blue gum, and serving the same purposes. Yellow box (*E. melliodora*) bears a large quantity of blossom, and hence is a favourite tree with beekeepers. Its timber is used for piles and posts, squared beams, and stringers for bridges. Messmate (*E. obliqua*) is largely sawn by mills for weatherboards, studs, rafters, joists, etc., and is also used for railway sleepers and fencing posts. Stringy-barks (*E. macrorrhyncha*, *E. capitellata*, *E. piperita*) are sawn by mills into ordinary building timber, and split by settlers into posts and rails and rough building material. Mountain ash (*E. amygdalina regnans*) is sawn into building material, and is also split into palings, shingles, rails, and mining laths. Silvertop (*E. sieberiana seu virgata*)—called also Gippsland mountain ash, green top, and white ironbark—is used for ordinary building purposes, and for fencing rails and rough construction. Sugar gum (*E. corymocalyx*) is held in high repute on account of its toughness and durability, and is chiefly used for railway sleepers, telegraph poles, coach building, and in wharf and jetty construction. White or manna gum (*E. viminalis*) is not a good weather timber, but is suitable for interior construction, such as house frames and floors.

The pre-eminent timber trees of the West are jarrah (*E. marginata*) and karri (*E. diversicolor*). Jarrah is in great request for piles in jetty and bridge construction, and for railway sleepers and street paving. It also furnishes a favourite material for boat-building, fencing, and rough furniture, and makes excellent charcoal. Karri is heavy, dense, elastic, and tough, not so easily wrought as jarrah, and is used for bridge-

decking, flooring, planking, spokes, felloes, shafts, and street paving. Tuart (*E. gomphocephala*) is exceedingly strong and tough, suitable for the framework of railway waggons, bridge supports, buffers, keelsons, shafts, wheelwrights' work, and generally for all purposes where great strength and hardness are necessary. The red gum (*E. calophylla*) is a fine shade tree, and is valued for the shelter it affords to cattle and sheep. Its timber, however, is not held in much esteem; but in short lengths it is employed for wheelwrights' work and agricultural implements. Its gum or kino has medicinal properties, and is also used locally for tanning hides. Wandoo (*E. redunca*) is used for fencing, wheelwrights' work, and railway buffers and sleepers. The blackbutt (*E. patens*), York gum (*E. loxophleba*), and yate (*E. cornuta*) of the West are largely used for fencing, building, and rough construction.

The Moreton Bay or hoop pine (*Araucaria cunninghami*) is used for interior work (flooring, ceiling, and lining boards) and for packing cases and butter boxes. Brown pine (*Podocarpus elata*) is also used for interior work, and for bridge, jetty, and pier piles. Cypress pine (*Callitris*), including red or black pine (*C. calcarata*); Murray pine (*C. verrucosa*), Port Macquarie pine (*C. macleayana*), and the Richmond River cypress pine (*C. columellaris*) are used for buildings liable to attacks of white ants, being strongly resistant to these pests. Cypress pine is also suitable for bridge decking and makes good fuel. Red cedar (*Cedrela australis*) furnishes timber of great beauty; it is easily worked and very durable, and is used for furniture and cabinet-making, doors, panelling, and interior fittings generally. Rosewood (*Dysoxylon fraserianum*) is easily wrought, and is used for furniture, turnery, carving, cabinet work, mouldings, planes, window joints, house fittings, and wine casks. Red bean (*Dysoxylon muelleri*) has a finely-figured grain and is an excellent furniture wood. White beech (*Glehnina leichhardtii*) is durable and easily worked, and is in great request for decks of vessels, furniture, picture frames, carving, flooring, house-fittings, vats, casks, and general coopers' work. Silky oak (*Grevillea robusta* and *Orites excelsa*) is also in request for coopers' work, and makes handsome furniture and wainscoting. The silky oak has also been used for butter kegs, buckets, churns, etc., and makes good butter boxes for the local markets. Black bean (*Castanospermum australe*), or Moreton Bay chestnut, is used for furniture, cabinet-making, and gun stocks. Tulip-wood (*Harpullia pendula*) is highly esteemed for cabinet-work, being used for door panels, dadoes, and billiard tables. Coachwood (*Ceratopetalum apetalum*) is suitable for boat-building, cabinet work, and coach-building. Kauri pine (*Agathis palmerstoni*) gives a light, strong, and durable timber, and is used for general building and construction, wainscoting, furniture and joinery, railway carriages, and ship-decking. Blackwood (*Acacia melanoxylon*) is very strong and durable, diminishing, however, greatly in weight in seasoning, though shrinking very little in volume. Figured blackwood is a beautiful timber: it is used for furniture, such as billiard tables, chairs, secretaires, casings of pianofortes and organs, and general cabinet work; dadoes, panelling of railway carriages, boat-building, picture frames, wheel naves, gun stocks, walking sticks, and a great variety of useful and ornamental purposes; it is also split into staves for wine and tallow casks. Evergreen beech (*Fagus cunninghami*) yields also a handsome timber, used for furniture, sashes and doors, light joinery, wood-carving, picture frames, and cog-wheels. Huon pine furnishes a fine, strong, and light timber; it is almost indestructible in water, and hence is largely used for boat planking; its beautiful grain brings it into request for furniture, panelling, and wainscoting. The King William variety is very tough, being used for racing sculls; it is also a favourite timber in joiners' work. Celery-top pine is strong and heavy, suitable for furniture, flooring, house frames, coopers' work, and masts. Other Australian brush timbers of minor importance are sassafras (*Atherosperma moschata*), used for saddle-trees and boot lasts; and satin box, sycamore, olive, and pencil-wood, giving woods of beautiful grain for parquetry, veneers, carving, and picture frames. The sandalwood of Western Australia (*Santalum cygnorum*) is a very valuable forest product, and has been exported in varying amounts during the last fifty years.

As aids in the development of Commonwealth industries, the Government is experimenting with Australian woods for rifle stocks, telephone switch boards, etc.

It has also made available a sum of money for the seasoning and storing of Australian timber. It is intended to establish seasoning depôts at the Federal Capital, and also at the principal centres in the various States, whence contractors will be able to obtain timber at scheduled rates. Other timber seasoning works have been established by private enterprise.

#### § 4. Forestal Industries and Production.

1. **Timber.**—The returns for quantity and value of timber cut and sawn, as given by the States Forestry Departments, are at present very incomplete. Owing to this fact the figures given hereunder are, in some cases, necessarily merely estimates.

##### QUANTITY OF LOCAL TIMBER SAWN OR HEWN IN EACH STATE OF THE COMMONWEALTH DURING THE YEARS 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.
New South Wales	119,337,000	122,998,000	123,152,000	134,070,000	138,845,000
Victoria	51,103,000	55,873,000	54,602,000	50,000,000	51,000,000
Queensland	82,801,846	91,752,000	100,760,000	108,331,000	116,438,000
South Australia	130,763	143,000	436,000	240,500	210,000
Western Australia	136,294,697	110,395,000	165,766,000	171,825,000	133,631,000
Tasmania	39,498,697	35,228,000	44,335,000	45,035,000	54,933,000
Commonwealth	429,166,003	416,389,000	489,051,000	509,561,500	495,057,000

The only States for which annual returns are furnished of the value of locally sawn or hewn timber are South Australia and Tasmania. The values returned for South Australia for the years 1906 to 1910 are respectively, £230; £815; £1084; £411; and £330.\* For Tasmania the values for the years 1906 to 1910 are respectively, £75,817; £110,689; £93,762; £138,492; and £194,106. The estimate for New South Wales, 1901 to 1906, is £4,050,000; for 1907, £1,440,000; for 1908, £763,241; for 1909, £801,456; and for 1910, £891,111. For Victoria, the output of timber, from forest sawmills only, was £153,309 in 1906; £181,590 in 1907; £177,460 in 1908; £189,130 in 1909; and £248,315 in 1910. The output of Western Australian sawmills was valued at £5,268,235 for the years 1901 to 1907; £763,241 in 1908; £1,105,108 in 1909; and £681,213 in 1910. For Queensland the value for 1908 was £665,350; for 1909, £736,578; and for 1910, £858,741.

2. **Forest Produce.**—Estimates have been made of the total value of forest production, but these must be regarded as mere approximations. Many of the items are very difficult, and some impossible, to obtain. Large returns are credited to firewood, but these have been omitted altogether, since estimates are subject to a wide range of uncertainty.

The Forestry Department of New South Wales estimates that the production in the seven years 1901-7 averaged at least £685,000 per annum. For Victoria the Government Statist gives the following figures:—1906, £217,569; 1907, £244,170; 1908, £234,154; 1909, £255,650; 1910, £226,080. This is exclusive of hewn timber. No figures on a similar basis are available for Queensland. The estimates for South Australia for 1906 to 1910 are £610; £440; £1086; £1628; and £1450. Western Australia averaged for the seven years 1901-7, £984,264. Tasmania supplies the following estimates for the years 1901 to 1906, viz., £152,102, £83,943, £114,227, £119,477, £94,987, and £126,514.

\* It is, of course, evident that the value of production was much greater than this.

### § 5. Oversea Trade.

1. **Imports.**—The timber imports are shewn according to countries of origin in the table below. Previously these figures were tabulated according to countries whence imported, and were so published in earlier issues of the Year Book. They are now presented in the improved form.

#### IMPORTS OF DRESSED TIMBER, COMMONWEALTH, 1907 to 1910.

Country of Origin.	Quantity.*				Value.			
	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ...	45,554	11,853	14,003	12,012	553	334	298	409
New Zealand ...	17,810	32,704	...	2,304	111	432	...	30
Other British Poss. ...	5,333	...	49,598	39,489	32	...	602	633
Norway ...	52,377,370	35,655,292	41,759,024	48,465,404	303,173	228,322	258,061	338,924
Sweden ...	7,122,102	7,623,737	12,104,559	13,648,238	48,056	50,356	94,752	100,968
United States ...	1,710,306	1,661,590	1,361,253	1,747,748	19,950	20,079	15,985	21,510
Other For. Countries	1,153,309	220,821	541,804	231,960	4,730	2,000	4,757	4,280
<b>Total ...</b>	<b>62,431,784</b>	<b>45,205,997</b>	<b>55,830,241</b>	<b>64,147,155</b>	<b>376,605</b>	<b>301,523</b>	<b>364,455</b>	<b>466,754</b>

\* Quantities are not included in classes not measured in super. feet.

#### IMPORTS OF UNDRESSED TIMBER, INCLUDING LOGS, COMMONWEALTH, 1907 to 1910.

Country of Origin.	Quantity.*				Value.			
	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ...	102,245	40,848	54,075	65,420	1,424	750	902	738
Canada ...	7,933,877	8,612,606	16,999,515	15,585,078	32,004	36,020	74,133	68,308
India ...	825,425	343,674	77,674	483,635	16,900	11,085	2,613	13,604
New Zealand ...	69,112,328	82,034,209	69,959,470	70,604,559	395,043	498,087	458,456	416,630
Straits Settlements	147,757	135,871	231,925	295,525	736	745	1,254	1,799
Other British Poss. ...	2,816	62,858	111,592	75,033	44	1,447	1,086	909
Japan ...	12,290,109	9,199,839	6,990,717	7,138,554	33,966	34,429	28,590	29,127
Java ...	537	805,284	479,055	64,450	11	13,969	1,959	1,244
Norway ...	2,298,711	5,007,451	3,894,852	6,104,204	13,957	31,997	26,228	43,065
Russia ...	1,346,590	8,851,925	6,597,627	14,878,325	10,364	51,045	37,147	83,408
Sweden ...	4,268,170	4,220,960	4,741,646	6,506,762	39,269	29,693	44,187	44,378
United States ...	119,498,696	147,463,309	101,434,431	156,219,083	631,293	754,780	531,116	835,614
Other For. Countries	203,767	259,727	233,204	653,617	1,154	2,508	2,020	3,354
<b>Total...</b>	<b>220,031,028</b>	<b>267,047,561</b>	<b>211,805,083</b>	<b>278,674,754</b>	<b>1,176,165</b>	<b>1,465,585</b>	<b>1,209,691</b>	<b>1,542,178</b>

\* Quantities are not included in classes not measured in super. feet.

2. **Exports.**—The quantity and value of undressed (sawn) timber exported from 1906 to 1910 is given below, the countries of destination being also shewn.

The year 1907 shewed considerable decrease in comparison with previous years, both in quantity and value, but the export was again heavy in subsequent years.

**EXPORTS OF UNDRESSED TIMBER (SAWN), COMMONWEALTH**  
**1906 to 1910.**

Country to which Exported.	Quantity.*					Value.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
	1000 Sup. ft.	1000 Sup. ft.	1000 Sup. ft.	1000 Sup. ft.	1000 Sup. ft.	£	£	£	£	£
United Kingdom...	25,561	14,156	20,760	21,689	10,879	167,081	88,010	139,223	151,724	77,003
Canada ...	568	368	1,314	492	610	5,566	4,240	13,143	5,267	7,038
S. African Union ...	6,282	6,503	1,104	3,768	11,687	35,211	36,693	7,234	24,712	80,223
Ceylon ...	25	21	3	2,235	303	213	211	23	14,864	1,833
Fiji ...	1,713	1,899	1,523	1,305	1,994	11,159	12,144	10,783	7,950	13,392
India ...	63,249	40,304	39,995	55,357	44,852	384,463	266,801	276,821	364,430	300,411
Mauritius ...	820	6	241	8	525	5,128	66	1,606	75	3,533
New Zealand ...	17,705	22,212	36,664	25,424	20,766	120,480	151,985	248,636	172,705	147,314
Ocean Island ...	574	705	974	416	268	3,935	5,579	7,914	3,296	1,605
Papua ...	142	94	...	160	357	1,260	899	1,146	1,366	3,497
Straits Settlements	1,047	254	1,838	601	52	5,849	1,909	9,943	3,877	320
Other British Pos.	5	506	4,743	4,022	2,643	38	2,777	30,282	29,702	19,651
Argentine Repub.	2,948	1,142	1,590	1,134	3,007	19,652	7,618	10,594	7,499	19,797
Belgium ...	509	1,286	2,515	1,820	3,535	3,913	7,659	19,618	12,154	24,870
China ...	12,335	2,845	2,373	7,263	409	81,673	19,397	12,370	26,595	2,693
Egypt ...	20	91	7,831	10,176	15,708	136	635	52,207	62,096	104,600
Germany ...	3,985	2,199	4,616	2,027	1,944	32,716	19,824	37,354	17,987	18,555
Japan ...	408	527	333	73	26	2,695	5,329	2,889	484	317
Kaiser Wilhelm L.	30	65	26	75	43	196	475	199	556	333
Marshall Islands...	503	562	460	162	229	3,418	4,177	3,770	1,325	1,643
Netherlands ...	1,175	869	245	35	...	5,745	2,854	1,660	256	...
Nor Pommern ...	121	170	204	211	562	841	1,242	1,454	2,504	4,838
New Caledonia ...	136	147	190	118	441	843	912	1,415	949	3,511
Philippine Islands	2,394	10,589	4,818	306	3,282	12,556	64,426	30,849	3,372	21,132
Port g'ese E. Africa	3,262	825	1,296	3,539	4,720	18,636	5,039	7,720	24,230	31,036
South Sea Islands (so described) ...	415	421	248	337	388	2,760	3,233	2,069	2,965	3,247
U.S. of America ...	582	799	416	659	2,501	5,272	7,248	3,633	7,703	12,693
Uruguay ...	6,137	4,815	9,300	3,894	6,240	40,912	32,073	62,003	25,963	41,596
Other For. Count.	1,776	967	334	648	4,863	7,184	6,669	2,642	5,164	29,674
<b>Total</b> ...	<b>154,422</b>	<b>115,347</b>	<b>145,954</b>	<b>148,064</b>	<b>142,824</b>	<b>979,530</b>	<b>760,124</b>	<b>999,200</b>	<b>981,770</b>	<b>976,355</b>

\* Quantities are not included in classes not measured in super. feet.

**QUANTITIES OF TIMBER IMPORTED INTO, AND EXPORTED FROM, THE**  
**COMMONWEALTH, 1906 to 1910.**

Description.	1906.	1907.	1908.	1909.	1910.
<b>IMPORTS.</b>					
Veneers ... Sup. feet	...	...	235,319	296,801	599,178
Dressed ... "	48,209,222	62,431,784	48,104,666	57,924,923	65,609,803
Undressed ... "	200,434,075	207,579,407	250,465,749	200,469,213	257,007,893
Logs ... "	1,134,329	12,451,619	16,581,812	11,335,870	21,666,861
Palings ... No.	...	...	...	...	...
Pickets ... "	800,260	1,106,364	1,461,726	1,226,082	2,123,998
Shingles ... "	468,990	2,079,041	830,960	1,270,476	690,710
Staves—Dressed, etc. "	2,345,789	1,470,765	62,804	4,600	600
Undressed ... "			1,610,571	2,390,888	3,929,063
Laths for blinds ... "	25,367,993	19,966,870	*	*	*
other ... "			21,660,183	25,692,686	38,564,512
Spokes, rims, felloes ... "	...	...	1,595,127	659,298	835,400
Doors ... "	3,343	975	386	4	2
Architraves, mouldings, etc. ... Lin. feet	131,830	65,581	34,175	29,725	9,045
Other ... "	*	*	*	*	*

\* Quantity not available.



## QUANTITIES OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1906.	1907.	1908.	1909.	1910.
EXPORTS.					
Veneers ...	...	...	...	...	...
Dressed ... Sup. feet	745,800	669,647	701,801	1,280,703	990,924
Undressed ... "	154,422,490	115,347,179	145,953,614	148,063,541	142,833,520
Logs ... "	1,740,775	4,261,379	3,326,259	4,254,472	2,195,219
Palings ... No.	656,170	730,825	826,900	718,550	608,602
Pickets ... "	91,594	7,147	6,050	3,000	19,570.
Shingles ... "	48,268	38,312	47,100	12,944	100,540
Staves—Dressed, etc. ...	...	...	*	90	5,000
Undressed ...	...	...	911	...	1,267
Laths for blinds ...	...	...	*	*	*
other ...	1,533,040	1,571,705	1,056,781	14,240	677,280
Spokes, rims, felloes ...	...	...	*	*	*
Doors ...	1,106	1,338	*	*	*
Architraves, mouldings, etc. ... Lin. feet	56,886	50,616	46,848	90,458	94,054
Other ...	*	*	...	...	...
EXCESS OF IMPORTS OVER EXPORTS.					
Veneers ...	...	...	235,319	296,801	599,178
Dressed ... Sup. feet	47,463,422	61,762,137	47,402,865	56,644,220	64,618,879
Undressed ... "	46,011,585	92,232,228	104,512,135	52,405,672	114,174,373
Logs ... "	—606,446	8,190,240	13,255,553	7,081,398	19,471,642
Palings ... No.	—656,170	—730,825	—826,900	—718,550	—608,602
Pickets ... "	708,666	1,099,217	1,455,676	1,223,082	2,104,428
Shingles ... "	420,712	2,040,729	783,860	1,257,532	590,170
Staves—Dressed, etc. ...	...	...	*	4,510	—4,400
Undressed ...	2,345,789	1,470,765	1,609,660	2,390,798	3,927,796
Laths for blinds ...	...	...	*	*	*
other ...	23,834,953	18,395,165	20,603,402	25,678,446	37,897,232
Spokes, rims, felloes ...	...	...	*	*	*
Doors ...	2,237	—363	*	*	*
Architraves, mouldings, etc. ... Lin. feet	74,944	14,965	—12,925	—60,733	—85,009
Other ...	*	*	*	*	*

\* Quantity not available.

Note. — signifies excess of exports over imports.

## VALUE OF TIMBER IMPORTED INTO, AND EXPORTED FROM, THE COMMONWEALTH, 1906 to 1910.

Description.	1906.	1907.	1908.	1909.	1910.
IMPORTS.					
Veneers ...	£ ...	£ ...	£ 8,289	£ 8,778	£ 14,814
Dressed ...	311,358	376,605	324,997	376,732	478,162
Undressed ...	948,021	1,141,199	1,388,224	1,158,445	1,432,301
Logs ...	5,351	34,966	77,361	51,246	109,877
Palings ...	...	...	...	...	...
Pickets ...	2,891	3,748	6,174	4,117	8,804
Shingles ...	435	2,987	913	1,873	851
Staves—Dressed, etc. ...	...	...	1,173	342	145
Undressed ...	20,612	13,326	14,215	18,178	24,542
Laths for blinds ...	...	...	44	83	24
other ...	18,802	18,118	16,547	20,970	28,397
Spokes, rims, felloes ...	...	...	35,976	12,408	17,297
Doors ...	1,373	438	251	1	1
Architraves, mouldings, etc. ...	676	489	156	59	29
Other ...	19,937	40,617	20,271	588	136
Total value	1,329,456	1,632,493	1,894,591	1,653,820	2,115,380

## VALUE OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1906.	1907.	1908.	1909.	1910.
EXPORTS.					
	£	£	£	£	£
Veneers ... ..	...	...	...	...	...
Dressed ... ..	6,886	6,603	7,438	12,104	11,896
Undressed ... ..	979,530	760,124	999,200	981,770	976,355
Logs ... ..	12,662	22,475	18,611	23,690	16,768
Palings ... ..	3,065	3,541	4,227	3,449	3,106
Pickets ... ..	569	66	52	26	176
Shingles ... ..	96	108	125	29	210
Staves—Dressed, etc. ... ..	...	...	111	1	52
Undressed ... ..	...	...	17	...	68
Laths for blinds ... ..	1,685	1,706	1,073	1,179	1,136
" Other ... ..	...	...	1,139	20	708
Spokes, rims, felloes ... ..	...	...	6,131	5,191	8,687
Doors ... ..	746	1,027	732	991	759
Architraves, mouldings, etc. ... ..	467	354	258	511	623
Other ... ..	6,405	9,129	...	...	...
Total value ... ..	1,012,111	805,133	1,039,114	1,023,961	1,020,044
EXCESS OF IMPORTS OVER EXPORTS.					
Veneers ... ..	...	...	8,289	8,778	14,814
Dressed ... ..	304,472	370,002	317,559	364,628	466,766
Undressed ... ..	—31,509	391,075	389,024	176,675	455,946
Logs ... ..	—7,311	12,491	58,750	27,556	93,109
Palings ... ..	—3,065	—3,541	—4,227	—3,449	—3,106
Pickets ... ..	2,322	3,632	6,122	4,091	8,628
Shingles ... ..	339	2,879	788	1,844	641
Staves—Dressed, etc. ... ..	20,612	13,326	1,062	341	93
Undressed ... ..	...	...	14,198	18,178	24,474
Laths for blinds ... ..	17,117	16,412	—1,029	—1,096	—1,112
" other ... ..	...	...	15,408	20,950	27,689
Spokes, rims, felloes ... ..	...	...	29,845	7,217	8,610
Doors ... ..	627	—589	—481	—990	—758
Architraves, mouldings, etc. ... ..	209	135	—102	—452	—594
Other ... ..	13,532	31,488	20,271	588	136
Total value ... ..	317,345	827,360	855,477	624,859	1,095,336

Note. — signifies excess of exports over imports.

The exports of sandalwood were :—

## EXPORTS OF SANDALWOOD, 1906 to 1910.

Country to which Exported.	Quantity.					Value.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	0.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
Hong Kong ... ..	134,769	140,586	158,444	54,387	141,646	55,970	50,903	65,037	25,546	71,672
Straits Settlements ... ..	9,369	7,284	1,484	12,390	7,378	3,721	2,542	589	5,036	3,319
Other British Possessions ... ..	4,364	4,593	14,680	5,163	15,223	1,782	1,803	5,604	2,358	6,301
China ... ..	28,025	31,637	17,560	31,649	19,399	9,299	10,886	6,238	12,180	7,332
Other Foreign Countries ... ..	478	312	...	...	...	215	103	...	...	...
Total ... ..	177,005	184,412	192,168	104,089	183,646	70,987	66,237	77,468	45,120	88,624

Tanning bark is largely exported from the Commonwealth, as the following table shews:—

### EXPORTS OF TANNING BARK, 1906 to 1910.

Country to which Exported.	Quantity.					Value.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom ...	46,825	35,808	5,878	19,424	12,159	16,978	12,976	1,782	8,188	4,674
New Zealand ...	73,831	67,541	72,933	69,137	55,838	30,844	29,160	31,637	31,414	25,036
Other British Poss. ...	519	462	1,655	1,745	1,886	218	214	793	902	860
Belgium ...	6,864	27,011	25,154	15,910	40,556	2,695	10,241	9,432	5,966	15,815
France ...	1,879	424	328	206	837	676	192	167	105	319
Germany ...	301,219	223,740	142,382	114,128	179,119	110,754	78,352	53,329	43,063	70,442
Other For. Countries ...	759	3,181	12,034	5,322	5,239	288	1,207	5,270	2,307	2,108
Total ...	431,896	358,167	260,364	225,872	295,616	162,453	132,342	102,410	91,945	119,254

The import of bark was very small, and the net export is little below the gross export.

### QUANTITIES AND VALUES OF BARK IMPORTED INTO, AND EXPORTED FROM, THE COMMONWEALTH, 1906 to 1910.

Particulars.	1906.	1907.	1908.	1909.	1910.
	cwt.	cwt.	cwt.	cwt.	cwt.
QUANTITIES—					
Imports ...	63	344	38,711	28,020	12,648
Exports ...	431,896	358,167	260,364	225,872	295,616
Excess of exports over imports	431,833	357,823	221,653	197,852	282,968
	£	£	£	£	£
VALUES—					
Imports ...	58	156	16,289	12,774	5,461
Exports ...	162,453	132,342	102,410	91,945	119,254
Excess of exports over imports	162,395	132,186	86,121	79,171	113,793

## SECTION XI.

## FISHERIES. AND PISCICULTURE.

## § 1. Commercial Fisheries.

1. **Early Fishing Excursions of Malays.**—Economic fisheries in Australia date back to a period long before the exploration of the northern and north-western shores of the continent by Tasman and Dampier. The Malays of Macassar, in their proas, made fishing excursions amongst the reefs and shoals skirting the coast, collecting and curing trepang or *bêche-de-mer*, a practice continued up to the present time. They arrive ordinarily at the beginning of the north-west monsoon, and return to Macassar after a few weeks, as the south-east monsoon sets in. In addition to collecting trepang, the Malays barter rice, tobacco, bright coloured handkerchiefs, etc., for tortoise shell, pearlshell, and seed pearls collected by the aborigines.

2. **Fish Stocks.**—Australasia, extending from 10° to 45° south latitude, possesses an abundant and varied fish fauna, which embraces both tropical and temperate varieties and includes destructive as well as edible species. In rivers and lakes both indigenous and imported varieties thrive. The latter have been introduced and acclimatised for industrial and sporting purposes by Governments and angling societies. Exploitation of the fishing areas—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, expressly forbidden; proclaimed localities are closed against net-fishing, and a minimum size of mesh for nets is sometimes fixed. The sea-fishermen in some districts have made regulations in their own interests for the purpose of controlling the market supply, and these they rigorously observe.

3. **Economic Fisheries.**—Australia's food fishes, though abundant, have not led to the development of an industry of national importance, though fresh and salt water fisheries pay handsomely in other countries, and could no doubt do so in Australia. It has been authoritatively asserted that:—"The collection and distribution of the knowledge of the world's work in fish-culture would make an acre of water more valuable than an acre of land, and the toilers of the sea could reap manifold their present harvest." This would involve also better arrangements for the distribution of fish than exist at present. Official reports state that the possession of scientific knowledge by the fishermen would greatly benefit the industry.

4. **Lake and River Fishing.**—Lake and river fishing take even lower industrial rank than marine fishing, though local catches furnish on the aggregate a not inconsiderable amount of food supply.

5. **Distribution of Supplies.**—Present methods of distribution impose serious difficulties on the development of fishing generally, since there is a wide divergence between the price paid by the consumer and the return received by the producer.

State Governments are interesting themselves in the direction of more economic distribution, while municipal oversight has been undertaken in Sydney and is proposed in other capitals. It is anticipated that an efficient system of fish supply to private customers will soon be established in the chief centres of population, where good markets are assured for regular deliveries of fresh fish.

**6. Oyster Fisheries.**—Natural oyster beds, whose ample product is of excellent quality, exist on the foreshores in the shallow waters of inlets and estuaries in several parts of Australia. By husbanding the natural crop, and by judicious transplanting, the oyster output has been very materially augmented, and it is believed that there is a great future for the industry. The areas are leased by the Government to private persons, lengths of foreshore being taken up and profitably exploited. In New South Wales particularly, the industry has developed recently, and satisfactory experiments have been successfully conducted in Victoria. In Queensland, the methodical cultivation of the beds has proved of great benefit to cultivators, besides improving the class of oyster marketed.

**7. Pearl-shelling.**—Pearl-shelling is carried on in the tropical districts of Queensland, the Northern Territory, and Western Australia. The pearl oyster inhabits the northern and western coasts from Cape York to Shark Bay, a length of shore of over 2000 miles. Along the north coast the pearls taken are small, and their aggregate value inconsiderable; but the shells are marketed in considerable quantities, the industry giving directly and indirectly employment to a large number of people, mostly Japanese, Chinese, and Malays. The Shark Bay pearling industry, however, is carried on for both gems and shells. The fishing is generally conducted with the aid of diving apparatus, in water varying from four to twenty fathoms in depth. The inshore banks and shallower waters have been almost entirely worked out, and the deeper waters, from three to twenty miles off shore, are now being worked.

In tropical Queensland pearl-shell diving is actively pursued, and is by far the most important of fishing industries, Torres Straits being the centre of production. With it the pursuit of *bêche-de-mer* is carried on, and tortoiseshell is obtained on the coasts. The industry is supervised by the Marine Department, which administers the Fisheries Acts. A statutory limit is fixed for the minimum size of shell that may be gathered. Experiments have been made in cultivating the pearl oyster on suitable banks. A small variety has been discovered at Stradbroke Island, in Moreton Bay, but the commercial value of the produce is small. In October, 1909, a pearl of great beauty and fine quality from the Thursday Island Fisheries was exhibited in Melbourne. Its weight was 32½ grains, and its value was stated at £1000.

The discovery of mother-of-pearl shell in Port Darwin Harbour in 1884 caused a rush of pearling boats from Torres Straits. But the muddiness of the water, rendered almost opaque by the heavy tides, prevented the divers from satisfactorily working the area, and led to the abandonment of the industry within three years of its birth. Prospecting in new patches has lately been carried out and the industry has been revived. In addition to pearl and trepang fishing, dry-salted fish is also exported from the Territory.

In Western Australia the centres of the industry are Broome, Cossack, Onslow, and Shark Bay. There are two distinct species of mother-of-pearl shell exported. The principal trade is done in the large shell (*Meleagrina margaritifera*), limited in distribution to tropical waters and extending in habitat from Exmouth Gulf northwards. It is used for the larger manufactured articles, such as dessert and fish knife and fork handles, large buttons, and inlaid work. The largest and finest pearls are obtained from it. The second species is that known commercially as the Shark Bay variety (*Meleagrina imbricata*). It is of smaller size and used chiefly for the manufacture of small buttons. The pearls found are of varying value. The Shark Bay pearlshell is collected by dredging in the deeper waters and gathering by hand from the shallow banks at low tide.

The system of licensing boats and men engaged in the pearling industry restricts, in the States where it is in force, indiscriminate exploiting of the areas, and returns a small revenue.

Poaching in Australian territorial waters has long been rife, particularly on the north-west coast. Recently the Commonwealth Customs Department arranged with the Celebes Islands Government for administering a check. One of the vessels of the Australasian Squadron searched the coast for poachers during a recent cruise, and it is believed that the evil has been almost entirely eradicated.

In accordance with the "White Australia" policy, it has been determined that the employment of coloured labour in the pearl-shelling industry shall be restricted, and ultimately cease altogether. After 31st December, 1913, permits to indent Asiatics for the pearling fleet will cease, and all divers and tenders employed upon the luggers must be white men. Arrangements have accordingly been made for the introduction of experienced divers from England. It is believed that practical difficulties will arise in the transition period. In March, 1912, the Commonwealth Government appointed a Royal Commission to inquire into the pearling industry generally, and particularly as regards its labour problems.

The heavy mortality amongst divers has led to suggestions for their medical inspection, and for the establishment of a diving school subsidised by the Government for training white divers.

## § 2. Fisheries Statistics.

1. **Estimates for the Commonwealth.**—The returns given below have been furnished by the State departments, and estimates, where they have been made, are official. The data do not generally lend themselves to presentation on a uniform scheme, but the principal facts have been compiled as far as possible for the Commonwealth.

### GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS, PEARLSHELL AND BÊCHE-DE-MER), COMMONWEALTH, 1910.

State.	No. of Boats Engaged.	Value of Boats and Equipment.	No. of Men Employed.	Total Take of		Value of Take.	
				Fish.	Lobsters.	Fish.	Lobsters.
	No.	£	No.	cwt.	doz.	£	£
New South Wales ...	1,145	*	2,324	129,999	11,103	122,324	4,441
Victoria ...	742	40,757	1,088	93,243	32,059	64,706	7,881
Queensland...	284	11,242	534	39,983	...	36,139	...
South Australia ...	623	29,094	958	48,214	3,500	87,500	4,500
Western Australia ...	220	17,400	431	30,220	9,000	56,400	3,150
Tasmania† ...	74	*	180	§	6,830	14,113	2,200
Northern Territory ...	...	...	...	...	...	...	...
Commonwealth ...	3,088	98,493†	5,515	341,659	62,492	381,182	22,172

\* Figures not available. † Exclusive of New South Wales and Tasmania. ‡ Returns incomplete; refer mainly to Hobart. § 83,269 dozen. || Exclusive of Tasmania.

## EDIBLE OYSTER-FISHERIES, COMMONWEALTH, 1910.

State.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Number of Leases.	Length of Foreshore in Leases.	Oysters Taken.	
						Quantity.	Value.
	No.	£	No.	No.	Miles.	cwt.	£
New South Wales ...	*	*	*	2,225	370	29,858	30,010
Victoria ...	...	...	...	...	...	...	...
Queensland...	105	7,794	162	715	*	29,829	30,592
South Australia ...	8	510	12	*	15†	167	167
Western Australia ...	...	...	...	...	...	...	...
Tasmania ...	...	...	...	...	...	...	...
Northern Territory ...	...	...	...	...	...	...	...
Commonwealth ...	*	*	*	*	*	59,854	60,769

\* Figures not available. † 1907 figures; returns for 1910 not available.

## PEARL, PEARLSHELL, AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH, 1910.

State.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Quantity of Pearlshell obtained.	Value of Pearlshell obtained.	Value of Pearls obtained.	Value of Bêche-de-mer obtained.
	No.	£	No.	Tons.	£	£	£
New South Wales ...	...	...	...	...	...	...	...
Victoria ...	...	...	...	...	...	...	...
Queensland...	192	60,000	1,309	571	82,652	26,620	12,785
South Australia ...	...	...	...	...	...	...	...
Western Australia ...	358	177,456	2,513	1,227	206,461	68,148	...
Tasmania ...	...	...	...	...	...	...	...
Northern Territory ...	36	10,800	216	55	10,030	...	1,303
Commonwealth ...	586	248,256	4,038	1,853	299,143	94,768	14,088

## PUBLIC REVENUE FROM FISHERIES, COMMONWEALTH, 1910.

State.	Licenses.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ...	1,107	5,166	90	708	7,071
Victoria ...	...	...	...	...	...
Queensland...	2,138	4,676	34	...	6,848
South Australia ...	301	...	...	...	301
Western Australia ...	1,419	...	53	2	1,474
Tasmania* ...	522	...	3	32	557
Northern Territory ...	9	...	...	...	9
Commonwealth ...	5,496	9,842	180	742	16,260

\* Returns incomplete; refer mainly to Fisheries Board of Hobart.

## GENERAL AND OYSTER FISHERIES, COMMONWEALTH, 1906 to 1910.

Particulars.	1906.	1907.	1908.	1909.	1910.
General Fisheries*—					
No. of boats engaged ...	2,510	2,740	3,063	3,101	3,088
„ men employed ...	4,614	4,722	5,107	5,492	5,515
Fish obtained—					
Quantity ... cwt.	213,290	265,650	289,820	298,351	341,659
Value... .. £	132,190	222,000	259,392	276,672	381,182
Lobsters obtained—Value, £	12,398	11,460	16,163	16,078	22,172
Edible Oyster Fisheries—					
No. of boats engaged† ...	150	153	139	139	113
„ men employed† ...	208	218	196	175	174
Oysters obtained—					
Quantity ... cwt.	20,100‡	79,832	57,590	59,109§	59,854
Value ... .. £	22,509‡	63,438	61,900	63,192§	60,769
Public Revenue from Fisheries					
Licenses ... .. £	8,200	8,419	8,891	8,812	5,496
Leases ... .. £	6,939	6,699	7,001	7,446	9,842
Fines and forfeitures	£ 368	208	168	142	180
Other sources ... .. £	334	503	885	649	742
Total revenue ... .. £	15,861	15,829	16,945	17,049	16,260

\* Exclusive of New South Wales for 1906. † Queensland and South Australia only. There are practically no oyster fisheries in Victoria, Western Australia, and Tasmania. ‡ New South Wales only. § New South Wales and Queensland only. || Exclusive of Tasmania.

PEARL, PEARLSHELL AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH,\*  
1906 to 1910.

Particulars.	1906.	1907.	1908.	1909.	1910.
No. of boats engaged ...	603	625	604	567	586
No. of men employed ...	3,767	3,920	3,852	3,883	4,038
Pearlshell obtained—					
Quantity ... .. tons	1,747	2,034	1,768	1,770	1,853
Value ... .. £	187,323	249,115	219,098	270,256	299,143
Pearls obtained †—					
Value ... .. £	59,524	64,890	49,225	77,788	94,768
Bêche-de-mer obtained—					
Quantity ... .. tons	235	358	346	352	251
Value ... .. £	20,541	30,931	22,903	16,410	14,088
Tortoiseshell obtained—					
Quantity ... .. lbs.	3,659	3,437	5,056	3,532	2,070
Value ... .. £	2,007	2,042	2,776	1,739	998

\* Queensland, Northern Territory and Western Australia only. There is no production in the other States. † As returned.

2. State Fisheries Statistics.—(i.) *New South Wales.* Much of the information is approximate. From 1904 to 1906 the average numbers of men and boats employed in general fisheries were respectively 1730 and 849; the average annual quantity of fish marketed was nearly six million pounds. In recent years the estimated number of men



employed has exceeded 2300, working upwards of 1200 boats. In 1907 the take of fish was 124,078 baskets, averaging 75 lbs. each. In 1908 the take was 134,437 baskets of fish, 11,031 dozen lobsters, and 3478 baskets (80 lbs. each) of prawns. In 1909 the take was 142,573 baskets of fish, 8497 dozen lobsters, and 6762 baskets of prawns; and in 1910, 130,000 cwt. of fish, and 11,100 dozen lobsters. The approximate value in 1907 was £64,000, in 1908 £72,760, in 1909 £74,000, and in 1910 £126,765. The fisheries revenue over a series of years averaged £6000 annually, amounting to £6626 in 1908, £6782 in 1909, and £7071 in 1910.

Considerable portions of the foreshores and shallow areas of the river estuaries are excellent natural oyster-beds, and with constant attention the annual yield of oysters could no doubt be materially increased. In 1907 the oyster leases covered 65 acres of deep water, and 553,975 yards of foreshore, and the yield was 14,406 bags, valued at £25,210. In 1908 there were leased 72 acres of deep water, and 597,495 yards of foreshore, from which 20,590 bags, value £26,900, were taken. The foreshore leased in 1909 was 662,135 yards, the take being 15,538 bags, valued at £27,192. Leases were not quite so extensive in 1910, 651,200 yards representing the foreshore worked, the produce being nearly 30,000 cwt., valued at £30,000.

(ii.) *Victoria.* In 1908 a Fisheries Inquiries Board investigated the conditions of the fishing industry in Victoria. The scope of the inquiry covered questions as to the permanent and temporary closing of areas against fishing; the length and number of nets to be used by any one party; poaching; the destruction of cormorants; the appointment of local inspectors; adequate punishment for offences against the Fisheries Act; trawling and long line fishing experiments; and the handling, freight, and marketing of fish. Some of the recommendations of the Board were given effect to, others are still under the consideration of the Government. The Fisheries Branch was, in 1909, transferred from the Public Works to the Agricultural Department, with a view to its reorganisation on the lines suggested in the Board's report. Legislation is proposed that is expected to result in the industry being considerably advanced in the near future. The number of boats engaged in the industry averages 700 over a series of years, and of men 1100. The take in 1907 was 99,707 cwt. of fish, valued at £60,442; and 24,889 dozen lobsters, valued at £6179. In 1908 it was 93,899 cwt. of fish, valued at £65,184; and 27,127 dozen lobsters, valued at £6726. In 1909 the take was 97,933 cwt. of fish, valued at £67,698; and 29,962 dozen lobsters, valued at £7403, and in 1910, 93,243 cwt. of fish, valued at £64,706; and 32,059 dozen lobsters, valued at £7881. Licenses to net in certain waters are issued without fee. These are not annual, being supplemented every year by new issues, but it is proposed to make the registration annual, and impose a fee. In 1907 legal proceedings, which called attention to the fact that the necessary licenses had not been taken out in many cases, resulted in a large increase in the issue of licenses. There is no separate revenue credited to fisheries, the small amount derived by way of fines being credited to general revenue.

Annual leases have been granted to oyster fisheries, but the return has been insignificant.

(iii.) *Queensland.* Prior to 1907 no account was kept of the value of boats and equipments, but an approximation believed to be very close was furnished. Over a series of years the number of boats and men engaged in general fisheries average 250 and 500. The take in 1907 was 32,500 cwt., valued at £24,437; in 1908, 31,000 cwt., valued at £28,519; in 1909, 34,050 cwt., valued at £32,987; and in 1910, 34,000 cwt. of fish, valued at nearly £33,000. There are no lobster fisheries. The quantity put up in tins in the fish-preserving establishments is not great, but the local demand is growing. The revenue from fisheries in Queensland is considerable, and is chiefly derived from licenses and leases. Since 1904 it has generally exceeded £7000, being in 1907, £7921; in 1908, £8176; in 1909, £8108; and in 1910, £6848.

For oyster fisheries, the deep waters in the Moreton Bay and Sandy Strait are leased as dredge sections, which extend across the channels to the islands, and contain from

100 to 1000 acres each. Within these sections the majority of the oyster banks (ground containing up to 30 acres lying within two feet of low-water mark) are situated on the foreshores of the islands, and on the mud and sand flats. In 1907, 60,000 cwt. of oysters were taken, valued at £37,500; in 1908, 37,000 cwt., valued at £35,000; in 1909, 38,300 cwt., valued at £36,000; and in 1910, 29,829 cwt., valued at £30,592. Leases granted numbered 924 in 1907, 885 in 1908, 807 in 1909, and 820 in 1910.

In the pearlshell industry, the last three years have been satisfactory, notwithstanding the industrial trouble early in 1908. Prices improved considerably, as much as £150 per ton being realised for pearlshell. During recent years, however, there has been a considerable diminution in the production, the number of boats and men engaged being much fewer than in preceding years. In 1907 the take was 577 tons of pearlshell, valued at £70,495; 338 tons of *bêche-de-mer*, valued at £30,033; and 3095 lbs. of tortoiseshell, valued at £1927. In 1908 the take was 424 tons of pearlshell, valued at £50,514; 322 tons of *bêche-de-mer*, valued at £21,631; and 4805 lbs. of tortoiseshell, valued at £2617. In 1909 the take was 516½ tons of pearlshell, valued at £70,505; 314 tons of *bêche-de-mer*, valued at £14,504; and 3156 lbs. of tortoiseshell, valued at £1,389; and in 1910, 571 tons of pearlshell, valued at £82,652; 221 tons of *bêche-de-mer*, valued at £12,785; and 1848 lbs. of tortoiseshell, valued at £838. Almost the whole of the *bêche-de-mer* collected was exported in a cured state to the East, and with few exceptions was fished for by Japanese and Manila men. Prior to 1907 no record of the value of pearls obtained was kept, and it is impossible to make an accurate estimate. In the year named the value was approximately £30,000; in 1908, £20,000; in 1909, £25,000; and in 1910, £26,620.

(iv.) *South Australia*. In 1907 the take was 20,734 cwt. of fish, valued at £25,121, and 1380 dozen lobsters, valued at £369; in 1908, 25,796 cwt. of fish valued at £34,756; and 14,000 dozen lobsters, valued at £3677; in 1909, 23,095 cwt. of fish, valued at £40,087, and 3522 dozen lobsters, valued at £3299; and in 1910, 48,214 cwt. of fish, valued at £87,500, and 3500 dozen lobsters, valued at £4500. The revenue from general fisheries was £286 in 1907, £368 in 1908, £356 in 1909, and £301 in 1910, all from licenses. Oyster fishing has been introduced, but has not, up to the present, attained any great dimensions. In 1907 and 1909, 416 bags were taken, valued at £728. For 1908 no figures are available. In 1910, 167 cwt. of oysters, valued at £167, were marketed.

(v.) *Northern Territory*. The limitation of shelling grounds and the scarcity of suitable labour has considerably hampered the pearl shelling industry, not more than half the fleet of boats having been engaged in late years. No pearls have been declared, but it is hardly possible that none were procured. It is believed that a quantity of pearls pass through the post office without the knowledge of the Customs, and that dishonest divers send some away unknown to the boat owners—in some instances by special messengers. There are indications that trepang fishing will receive more attention than hitherto from Europeans, in whose hands the whole of the industry is now held. The closing of the coast against the Macassar proas must necessarily cause a shrinkage, but it is expected that in the course of a year or two this will prove a great boon to local boats, inasmuch as it will give the fishing grounds time to recoup. Both the pearlshell and the trepang fisheries are capable of expansion. In 1907 pearlshell taken amounted to 64 tons, valued at £8805. Other products were:—342 lbs. of tortoiseshell, valued at £115; 38,976 lbs. of dried fish, valued at £822; and 20 tons of *bêche-de-mer*, valued at £898. In 1908, many of the boats were taken off for want of men, others to carry on different work. The take was 58 tons of pearlshell, valued at £7578; 24 tons of *bêche-de-mer*, valued at £1272; 83,900 lbs. of dried fish, valued at £1697; and 251 lbs. of tortoiseshell, valued at £159. Revenue from licenses amounted in 1908 to £59. In 1909 the licensed pearling fleet consisted of 39 luggers, one steamer, and six canoes. Of these boats only 26 were actually engaged. The area worked over was old ground. The pearlshell taken was 58½ tons, valued at £10,085. With a take equal to that of the previous year, the price realised was about 25 per cent. better. No pearls were reported. The export of trepang was 38 tons, valued at £1906. This industry

has been steadily increasing since 1905, when the coast was closed to the Macassar fishermen. The production of dried fish in 1909 was 63,504 lbs., valued at £1091; and tortoiseshell, 376 lbs., valued at £350. In 1910, 55 tons of pearlshell were produced, valued at £10,030; 30 tons of béche-de-mer, valued at £1303; 34,272 lbs. of dried fish, valued at £5917; and 222 lbs. of tortoiseshell, valued at £160.

(vi.) *Western Australia.* The take in 1908 was 1500 tons of fish, valued at £50,000, and 10,000 doz. lobsters, valued at £3000. In 1909 it was 1500 tons of fish, valued at £52,500, and 10,920 dozen lobsters, valued at £3276, and in 1910, 1511 tons, valued at £56,400, and 9000 dozen lobsters, valued at £3150. Revenue from fisheries amounted in 1907 to £787, in 1908 to £1174, in 1909 to £1234, and in 1910 to £1474.

The quantity of pearlshell obtained in 1907 was 1393 tons, and the value £169,815; in 1908 the quantity was 1286 tons, valued at £161,006; in 1909, 1196 tons, valued at £189,666, and in 1910, 1227 tons, valued at £206,461. Pearls to the value of £64,690, £29,225, £52,788 and £68,148 were taken in 1907, 1908, 1909 and 1910 respectively. The béche-de-mer fisheries are little developed, and no produce of commercial value was obtained during the last four years, although in previous years small quantities have been marketed.

(vii.) *Tasmania.* The fishing boats and fishermen in Tasmania are not licensed, and no record is kept of them. The fish markets are under the control of the municipalities, and these do not keep complete records of quantities sold. In 1908 the estimated take of fish was 17,800 cwt., estimated value £11,400. In 1910 the Hobart fisheries produced 83,269 dozen fish, valued at £14,113, and 6830 dozen lobsters, valued at £2200. The revenue over a series of years averages about £600, mostly derived from licenses to angle for salmon and trout with rod and line. In 1907 the total receipts were £596; in 1908, £569; in 1909, £470; and in 1910, £557.

Oyster fisheries are not worked except in a most primitive way.

The work of the Commissioner trends mostly in the way of breeding and distributing young fresh-water fish, especially acclimatised trout.

### § 3. Oversea Trade in Fish.

That the development of the fishing industry in Australia leaves much to be desired is evident from the fact that the import of preserved fish into the Commonwealth is large, the export inconsiderable. The figures for the trade are as follows:—

#### IMPORTS OF FISH, COMMONWEALTH, 1906 to 1910.

Classification.		1906.	1907.	1908.	1909.	1910.
Fresh (oysters) ...	{ cwt.	9,225	12,288	9,702	10,580	9,640
	{ £	4,075	5,607	4,381	4,989	4,805
* Fresh, or preserved by cold process... ..	{ cwt.	9,591	12,970	19,311	11,355	11,248
	{ £	14,632	22,698	48,072	20,785	23,001
Potted ... ..	{ cwt.	†	†	†	†	†
	{ £	11,934	13,364	20,874	22,082	25,408
Preserved in tins ... ..	{ cwt.	135,872	127,555	144,750	137,860	154,547
	{ £	310,656	316,320	400,981	371,620	466,381
* Smoked, dried and n.e.i.	{ cwt.	17,336	15,933	19,349	21,667	19,448
	{ £	29,729	33,078	34,780	47,096	42,918
Total ... ..	{ cwt. †	172,024	168,746	193,112	181,462	194,888
	{ £	371,026	391,067	509,088	466,572	562,513

\* In 1906, smoked fish are included with "fresh or preserved by cold process."

† Not available. ‡ Exclusive of potted fish.

## EXPORTS OF FISH (AUSTRALIAN PRODUCE), 1906 to 1910.

## COMMONWEALTH.

Classification.		1906.	1907.	1908.	1909.	1910.
Fish, smoked, or preserved by cold process	{ cwt.	264	160	394	994	910
	{ £	468	296	1,230	2,896	1,968
Preserved in tins, dried, salted, etc.	{ cwt.	6,107	8,651	7,006	6,746	5,346
	{ £	24,559	38,977	23,299	15,556	17,521
Total	{ cwt.	6,371	8,811	7,400	7,740	6,256
	{ £	25,027	39,273	24,529	18,452	19,489

A considerable development has taken place lately in the fish preserving industry. Two factories were opened in the Northern Territory in 1907, and a large output resulted from the operations of those previously established. There was, however, for the Commonwealth an excess of imports over exports amounting approximately to £350,000 in 1906 and 1907, £485,000 in 1908, £450,000 in 1909, and £550,000 in 1910.

The exports of pearlshell and tortoiseshell are given hereunder for the five years 1906-10:—

## EXPORTS OF PEARLSHELL AND TORTOISESHELL, 1906 to 1910.

## COMMONWEALTH.

Article.		1906.	1907.	1908.	1909.	1910.
Pearlshell	{ cwt.	35,632	41,244	40,746	34,579	39,559
	{ £	212,242	252,063	250,901	250,274	318,647
Tortoiseshell	{ lbs.	4,835	3,566	5,310	3,207	1,742
	{ £	2,507	2,192	2,783	1,557	823

## § 4. Development of the Fishing Industry.

1. **Transport and Marketing.**—The large importations of fish into the Commonwealth indicate the scope for the development of the local fishing industry, and for many years the question of securing to the consumer a regular supply of a wholesome article at a moderate price has been under consideration. In Sydney, the City Council has undertaken the handling and marketing of the product. Where quick transport by rail or steamer is not provided, the catch of fish in tropical or sub-tropical waters can only be locally consumed, since speedy marketing is essential. Adequate refrigerating apparatus on railway waggons and coasting steamers and quick transport to centres of population might, however, alter the economic condition in a satisfactory direction. In the temperate regions there are adequate supplies close to the principal ports—a fact which is of considerable advantage, since short trips mean marketing of the produce in good condition, and lesser sea risks are incurred. At the present time the natural wealth of Australia in fish is exploited only to a very slight extent. The daily supply of fish in Great Britain is 300,000 tons, and the deep sea fisheries cover an enormous area.

2. **Experiment and Culture.**—(i.) *The Existing Fisheries.* In many respects the fishing industry is capable of modification and development. A good deal has been effected by the State Governments in the way of experiment and culture, but much

yet remains to be done before the industry is at all commensurate with the industrial progress and consuming capacities of the Commonwealth. A uniform policy of development for Australia is desirable, and recommendations have been made that the Fisheries Departments of the various States should co-operate with the Federal Government in its efforts to increase the productiveness of the Commonwealth waters, and the research work generally undertaken by it; and that uniform fisheries laws should be adopted by adjacent States. The existing fishing is inshore, the supplies being obtained from the vicinity of river estuaries and lakes. Deep-sea fishing, as established and carried on in older countries, is, so far, practically non-existent in Australia. It has been established that the deposits of fish eggs generally float upon the water. The drift of currents or the influence of winds often carry them a considerable distance from the shore, thus affording very little chance of development. The problem that is now engaging experts all over the world is how to artificially control the drift of eggs, so that the fish may be hatched near shore under the most favourable conditions.

To prevent the importation of fish of predaceous habits, or otherwise undesirable, all live fish arriving in Australia are examined on shipboard.

(ii.) *New South Wales.* In New South Wales, trawling experiments have shewn that considerable areas along the coast are suitable fishing grounds, but practical work on commercial lines is yet undeveloped. The stocking of rivers and lakes was begun by private enterprise, but Government aid was granted later, and eminent success has been attained, particularly with the Californian rainbow trout. Young fry are distributed annually from the trout hatchery at Prospect, and the natural reproduction of the fish in the streams that issue from the mountain ranges is regarded as a valuable asset. In 1902 attempts were successfully made to transport European fishes alive to Australia. A marine hatchery and biological station has been completed at Gunnamatta Bay, Port Hacking, by means of which it is proposed to gradually acclimatise suitable fishes. There is an increasing output each season of ova and fry. The natural oyster beds are also being extended. In September, 1909, a Fisheries Exhibition was held at Sydney, to shew the resources of the State.

With the object of ascertaining something of the movements of oceanic fishes, as well as of those estuarine fishes which make periodical oceanic migrations, lighthouse-keepers on the coast report weekly the various kinds of fishes, etc., observed travelling along the coast, as well as the quantity and size of fish seen. Some very useful information has in this way been obtained.

By arrangement with the Commonwealth Fisheries Department, members of the staff of the Australian Museum, Sydney, accompany the F.I.S. "*Endeavour*" on various cruises. Specimens are collected, mounted for scientific purposes, and distributed to other Australian Museums, a considerable number being put aside for the Fishery Museum to be established by the Commonwealth Government in connection with the department.

(iii.) *Victoria.* In Victoria, besides the culture that has been mainly the work of private individuals and angling clubs, the Government has incurred the expenditure of a sum of money on hatcheries, with good results. Fry and yearlings are distributed, and one consignment of the latter was despatched from the Geelong hatchery and liberated without loss at Mundaring, Western Australia. Young rainbow and Loch Leven trout are also released into the rivers of the State from the hatcheries lately established at the Zoological Gardens. At Studley Park, Melbourne, and at Ballarat, there are also ponds for experimental culture. Trawling experiments were conducted some years ago, but the results were inconclusive.

(iv.) *Queensland.* In Queensland, artificial hatching was undertaken by the Acclimatisation Society of Southern Queensland. Here, also, the American rainbow trout has succeeded, fry being distributed from the hatchery at Spring Creek, Killarney. The lung-fish, formerly known only in two streams, has been successfully transplanted to several other streams. Oyster beds are also being developed in several parts, and

improved methods of culture have largely increased the output. The trawling experiments of 1901 and 1902 point to the improbability of a great trawling industry being established. The trawling area of Queensland would be a mere strip, because of the presence of the coral region immediately to the north, and the fact that the sea deepens very rapidly to the east.

(v.) *South Australia.* In South Australia the indiscriminate exploitation of the Port Lincoln and adjacent oyster beds led to the necessity for their being closed from time to time to prevent the district from being altogether worked out. The future outlook has in this way been improved as regards oyster culture. The South Australian general fishing grounds have been stated to be most desirable areas, only wanting men and boats to ensure a large take. Many new grounds have been opened up on the West Coast and the unsuitable areas have been defined. Trawling by private individuals has been undertaken. The question of establishing a floating hatchery is under consideration.

On the 1st April, 1910, the Fisheries Act Amendment Act of 1909 became law, and revised regulations were promulgated. Provision is made that a fisherman must be a natural born or naturalised British subject, and must be licensed, and have his boat registered and marked. Inspectors are given considerable power to protect the industry and those engaged in it.

The Fisheries Department is taking active steps to increase supplies, and is gathering information respecting natural breeding grounds, with a view to making them sanctuaries for the breeding of young fish. It is believed that the reservation of these spawning places will replenish the supplies with more certainty and less expense than by artificial hatcheries. The closing of certain waters for breeding grounds has had the effect of increasing the fish supply on the coast and in the River Murray.

(vi.) *Western Australia.* In Western Australia the coastal waters have been examined to ascertain whether suitable trawling grounds exist. The Acclimatisation Committee has successfully hatched and liberated trout, the Mundaring Weir being stocked with the Loch Leven variety. Perch were stocked in the lakes near Wanneroo Caves.

(vii.) *Tasmania.* Expert advice indicates that the depths of the ocean surrounding Tasmania are ideal for trawling, and that there are very good openings for a profitable fishing trade in the island. Considerable distributions of ova and fry are annually made from the River Plenty in Tasmania. Besides the supplies to Tasmanian waters, the northern States are also recipients of ova.

## § 5. The Commonwealth Department of Fisheries.

1. **The Federal Council of Australasia.**—The Federal Council had power to legislate with regard to fisheries in Australasian waters beyond territorial limits. In its second session (opened 16th January, 1888), an Act was passed to regulate pearlshell and bêche-de-mer fisheries in Australasian waters adjacent to Queensland; and in the third session, opened shortly afterwards, the Act was made applicable to Western Australia. By the passing of the Commonwealth Constitution Act of 1900, however, the Federal Council was abolished.

2. **Commonwealth Investigations.**—In 1907 the Commonwealth Government decided to demonstrate what may be attained commercially by the application of modern methods and experiences. A Federal Investigation Ship, the *Endeavour*, was constructed specially for the work, and a Director of Fisheries was appointed. Cruises and experiments were immediately instituted. These shew that the Commonwealth possesses an asset of considerable value in her sea fisheries. The scope and results of the inquiries are set out in the Director's reports, and are summarised below.

3. **Scope of the Inquiry.**—The immediate scope laid down for the investigation was, shortly, as follows:—

- (i.) By various means of capture to ascertain what marketable food-fishes may be found in ocean waters adjacent to Australia.
- (ii.) In what quantity they may be taken.
- (iii.) To what extent they migrate, and where.
- (iv.) How they may be conveniently and economically captured.
- (v.) By systematic survey to find out and chart suitable fishing grounds.

In addition to the work which is being thus carried on in the various recognised methods of capture (including long-line and drift-net fishing, etc.), survey, hydrographic work, etc., is conducted, for the purpose of ascertaining the nature of the bottom, depth of water, currents, and sea temperature.

4. **The F.I.S. "Endeavour."**—The construction of the investigation vessel was undertaken in the Commonwealth, and was upon the lines shown by the most recent European experience to be of greatest advantage, with necessary modifications to suit the Australian climate. Australian materials were used. On 1st June, 1908, the keel was laid, and on 27th August the steel hull was ready for launching. The official trial took place in January, 1909, and on 9th March, the equipment being complete, there was put in commission the first Commonwealth-owned seagoing ship, named *Endeavour*, after Captain Cook's historic vessel. The measurements of the vessel are:—134 ft. 9 in. over all; beam, 23 ft.; moulded depth, 11 ft. 9 in.; greatest draft, 11 ft. 9 in. The engines are of triple expansion type, and develop 440 i.h.p. The speed is nearly 11 knots. The vessel is suitably equipped for her work, all available space being put to use; and has proved to be an excellent and reliable sea boat. She closely resembles a modern trawler, fittings for her special service having been added. The main winch is especially powerful, and carries 2000 fathoms of  $2\frac{1}{2}$  in. and  $1\frac{1}{2}$  in. wire rope for trawling purposes. An additional reel attached to the fast running axle on the winch carries 1500 fathoms of  $\frac{3}{4}$ -in. wire rope for hydrographic observations. The starboard side is generally fitted and equipped for operating the large otter trawl (95 feet head line), while on the port rail a Lucas Sounding Machine (5000 fathoms of piano wire) and davits for various purposes have been fixed. The hold is given up to net stores, and a cool chamber for the keeping of fish, etc. On the deck aft is provided a laboratory, where preliminary investigations are carried out. Here also is stored all the special apparatus, including deep-sea water bottles, thermometers, etc.

5. **The "Endeavour's" Cruises.**—The first cruise began on 12th March, 1909, and ended six days later. Up to 19th October, 1910, twenty-nine cruises had been undertaken in the waters off the coasts of Queensland (as far north as Bowen, latitude  $20^{\circ}$  S.), New South Wales, Victoria, South Australia, and Tasmania. In many cases, areas have been revisited and tested at different seasons of the year, thus affording a fair indication of their true fisheries value.

6. **Results.**—The object of the investigations is to shew how and where food-fish may be obtained in quantity, rather than to bring large catches into port. Moreover, in untested areas, sounding and survey work generally becomes a main feature. The surveys were extended to cover fields as large as possible, the duration of each haul with the trawl being limited to average about two hours. A commercial vessel, working on well-known grounds, would remain continuously on the richest fields until a freight was secured, and would work longer drags. The take of the *Endeavour*, therefore, is considerably below what is to be expected from a vessel working the fields for profit.

Experiments with drift nets and long lines, although up to the present not largely carried out, have given promising results. Trawling has been the principal method tried. By this means the fish are disturbed by a large bag-shaped net drawn along the sea bottom, and they are caught and retained in a trap arrangement at the tail-end of the net. Generally, the trials have been limited to waters of not more than 100 fathoms in depth.

The cruises have shown that both suitable and unsuitable trawling grounds were met with in all parts; and that not all suitable grounds are rich in fish life. Over vast areas the bottom consists of coarse ("hungry") sand, which is almost barren and desert-like, while in other instances the sand is covered with quantities of sponges and other growth. The richest grounds were found in localities where a reversal of currents or eddies facilitates the accumulation of fish food.

In conjunction with the survey work, investigations were undertaken regarding the deep water currents and their relation to the abundance of fish food and migrations. Bottom samples have been obtained from various depths down to 1200 fathoms, and water samples and temperatures from intermediate depths. Plankton collections from the surface have also been obtained, particularly to ascertain the distribution of pelagic fish eggs.

A varied and scientifically interesting collection of rare fishes, invertebrates, etc., has also been obtained, and arrangements made with naturalists in various parts of the Commonwealth to classify and mount the specimens.

Reports on the hydrographic, survey, and scientific departments of the vessel's activity are being prepared. At the end of 1911 the first of the zoological results of the fishing experiments of the *Endeavour* was published.

**7. Treatment and Disposal of the Catch.**—It was decided that the wisest method of disposing of the fish was to distribute them to recognised charitable institutions. Clashing with the established industry was thus avoided. Upwards of one hundred charities have benefited.

Upon capture, the prompt gutting and washing of the fish is performed. The necessary records are taken regarding the number, size, food, etc. They are then dried, and stowed in the cool chamber.

Unmarketable fish constitute a considerable proportion of the catch. Experience elsewhere has shewn that fish for which there is no sale for consumption, have a considerable value as material for rich fertilisers, and the extraction of oil. For both these by-products there is a good overseas market.

**8. Possibility and Scope for Future Development.**—The records of the *Endeavour's* cruises are preserved in the departmental office, and there all particulars of the progress of the work are available. The Director's report gives two instances of the remarkable return that experience shews is to be expected to accrue from working the areas examined. A vessel working at Flinders Island with Melbourne as a base would yield profits averaging 40 to 45 per cent., while part of the east coast of New South Wales worked, with Eden as a base, would in one year earn the cost of the trawl and working expenses.

The inadequacy of the present supply of fish is universally admitted, yet all reports agree that there is, on the coast, a bountiful supply of fish. It is not, as in Great Britain and the northern countries of Europe, a popular article of diet, but is rather in the nature of a luxury. While the value of consumption of fish was in Norway 12s., and in Holland, Denmark, and the United Kingdom 5s. per head of population, in Australia it was little over 1s. Moreover, in the European countries named, notwithstanding the fact that the trawlers have generally to go much further afield for their catches, a shilling's worth of fish represents a much larger quantity than could be obtained for the same amount in the Commonwealth, where the wealth of the coastal waters indicates that, with satisfactory handling, the product of the sea would become an article of food for the poorest classes, and a valuable industry would be developed. The uncertainties



and limitations of the market, caused by the irregularity of the supply, will be overcome when the fact is recognised that the ocean product, properly exploited, is adequate to supply the demand, however strong. Under present conditions, it is not surprising that Australians are not great fish-eaters. As a result of the *Endeavour's* experiments, definite steps are being taken to carry out well-considered schemes, which it is hoped will stir up enterprise, and revolutionise the now obsolete and cramped condition of the Australian fish trade.

### § 6. Fish Preserving.

Bounties have been provided by the Federal Government for fish preserving. The amounts paid were £27 in 1907-8; £1727 in 1908-9; £311 in 1909-10; and £115 in 1910-11. The amount available for 1911-12 is £10,000. It is anticipated that the bounties, together with the increased yield that may be expected to result from the fisheries investigations now being conducted, will lead to a considerable output and consumption of locally preserved fish. The abundance of fish in Australian waters offers excellent opportunities for the institution of preserving establishments, particularly in those coastal districts which enjoy a temperate climate. Up to the present but little development has taken place. The establishments for fish preserving at the present time are very few.

#### NUMBER OF FISH-PRESERVING ESTABLISHMENTS IN COMMONWEALTH, 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
New South Wales ...	2	1	1	1	1
Victoria ...	...	...	...	...	1
Queensland ...	4	4	5	6	6
South Australia ...	...	...	...	...	...
Western Australia ...	3	3	3	3	3
Tasmania ...	...	...	...	...	...
Northern Territory ...	...	2	2	2	2
Commonwealth ...	9	10	11	12	13

## SECTION XII.

## MINES AND MINING.

## § 1. The Mineral Wealth of Australia.

1. **Place of Mining in Australian Development.**—The value of production from the mineral industry is now considerably less than that returned by the agricultural or the pastoral industry, nevertheless it was the discovery of gold in payable quantities, that first attracted population to Australia, and thus laid the foundation of its nationhood. Prior to 1851, the year when Hargraves' memorable discovery was made, coal and copper had both been mined to some extent, and the existence of deposits of other minerals including gold had been proved. But it was the news of the sensational finds of the precious metal in 1851 and the year immediately following that brought about a constant stream of immigration, and caused an increase in population from 221,000 at the end of 1841 to upwards of 1,168,000 at the end of 1861.

2. **Extent of Mineral Wealth.**—The large production of gold, silver, copper, and tin, the extent of the coal deposits, the presence of large quantities of iron ore, and the great variety of minerals found in appreciable quantities, suggest that the future history of mining will, in all probability, be more remarkable even than that of the past. For the extent of the total mineral wealth of Australia cannot yet be regarded as well ascertained, since the mineral exploration of the country is, after all, still in its infancy. The presence of considerable deposits of valuable minerals has long been known. Thus, coal was discovered in 1797, and a shipload was exported to Bengal in 1799; silver was discovered by Count Strzelecki as early as 1839, and was worked as early as 1864; copper mining dates back to 1844; lead to about 1848; iron to about 1850; while the discovery of gold in payable quantities dates back to 1851. Cobalt, nickel, manganese, chromium, tungsten, molybdenum, mercury, antimony, bismuth, zinc, etc., have all been found, some in fairly large quantities.

Among the more valuable non-metalliferous substances may be mentioned coke, kerosene shale, graphite, alunite, asbestos, diatomaceous earth, clays, ochres, etc.; in building stones, sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones, diamonds, emeralds, rubies, sapphires, amethysts, precious opal, turquoise, topazes, garnets, chrysolites, cairngorm, agates, etc. In general it may be said that the variety of Australian mineral wealth is very great.

3. **Value of Production during 1910.**—Compared with the returns for 1909 the total mineral production of the Commonwealth shows an increase in 1910 of over £170,000. The largest advance is exhibited in the figures for New South Wales, where the total was over a million in excess of that for the preceding year. Queensland also shows an increase amounting to upwards of £53,000. The improvement in the States mentioned was, however, counterbalanced by more or less heavy decreases in the remaining States, the return for Western Australia shewing a falling-off amounting to nearly £537,000, while there was a decline in the Victorian yield to the extent of £271,000. In Victoria the decline is attributed to the falling-off in the gold yield, due to diminished returns from the lode mines at Bendigo, Ballarat, Maldon, and Berringa, and the deep alluvial workings at Rutherglen, Creswick, and Clunes. In Western Australia, the principal decreases were in gold and tin, gold alone shewing a falling-off of £529,000, through

exhaustion of the available deposits at some of the principal mines, while the diminished yield in tin is attributable to depletion of the more easily accessible stanniferous wash. In South Australia and Tasmania the production of copper was adversely affected by the low prices ruling for the metal in 1910. In common with the rest of Australia, there was also a falling-off in the gold yield for each of these States.

The value of the production of all minerals raised in each State during 1910 is given in the following table :—

## COMMONWEALTH MINERAL PRODUCTION IN 1910.

Minerals.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	N. Ter'y.	C'wealth.
	£	£	£	£	£	£	£	£
Alunite ...	2,840	...	...	...	...	...	...	2,840
Antimony ...	1,450	6,255	...	...	...	...	...	7,705
Asbestos ...	...	...	...	...	...	...	...	...
Bismuth ...	2,004	...	114,572	...	...	4,249	...	20,825
Coal ...	3,009,657	189,254	322,822	...	113,699	48,609	...	3,684,041
Coke ...	189,069	...	...	...	...	...	...	189,069
Copper ...	486,257	450	932,489	306,120	95,928	566,972	1,196	2,389,412
Diamonds ...	2,881	...	...	...	...	...	...	2,881
Diatomaceous earth	242	2,000	...	...	...	...	...	2,242
Gems (unspecified)...	...	...	21,200	...	...	...	...	21,200
Gold ...	802,211	2,422,745	1,874,955	28,000	6,246,848	157,370	21,711	11,553,840
Gypsum ...	...	715	...	9,000	...	...	...	9,715
Iron ...	161,948	...	...	...	...	...	...	161,948
Iron oxide ...	714	...	...	21,945	...	...	...	22,659
Ironstone flux ...	1,321	...	35,429	...	12	...	...	36,762
Kaolin ...	790	202	...	...	...	...	...	992
Lead (pig, etc.) ...	248,561	...	30,401	260	...	...	...	279,222
Limestone flux ...	16,946	...	34,144	3,720	...	...	...	54,810
Manganese ...	80	142	3,127	...	...	...	...	3,349
Molybdenite ...	5,667	...	12,050	...	...	...	...	17,717
Opal ...	66,200	...	3,000	...	...	...	...	69,200
Platinum ...	1,418	...	...	...	...	...	...	1,418
Salt ...	...	*	...	27,600	...	...	...	27,000
Scheelite ...	15,747	...	286	...	...	...	...	16,033
Shale ...	33,896	...	...	...	...	214	...	34,110
Silver ...	175,775	2,090	92,685	625	18,777	...	...	289,952
Silver-lead bullion	1,685,704	...	...	...	...	...	...	1,934,735
Silver-lead ore ...	...	...	...	22	1,433	247,576	...	...
Tin ...	228,156	3,706	243,271	...	45,129	399,393	31,113	950,768
Wolfram ...	16,258	2,092	88,116	...	190	7,280	6,686	120,622
Zinc ...	1,289,634	...	...	...	147	...	...	1,289,781
Unenumerated ...	4,493	50	...	15,170	100	530	...	20,343
Total ...	8,449,919	2,629,701	3,708,547	411,862	6,522,263	1,432,193	60,706	23,215,191

\* Not available for publication.

† Including some amount of Wolfram.

It may be pointed out in connection with the figures given in the above table that the totals are exclusive of returns relating to certain commodities, such as stone for building and industrial uses, sand, gravel, brick clays, lime, cement, and slates, which might rightly be included under the generic term "mineral." Valuations of the production of some of these may be obtained from the reports of the various Mines Departments, but in regard to others it is impossible to obtain adequate information. In some instances, moreover, the published information is of little value. Thus, the New South Wales Mines Report for 1910 gives £21,000 as the production of building stone to the end of the year named, but it is explained in a note appended to the table that this sum represents exports only. The Victorian Mines Department estimates the production of building stone as £3,831,000, but the returns are incomplete. It has therefore been considered advisable to discard both totals. By restricting the comparison to the items enumerated above, it is believed that a fairly satisfactory estimate of the progress of the mineral industry can be readily obtained.

**4. Total Production to end of 1910.** In the next table will be found the estimated value of the total mineral production in each State up to the end of 1910. The figures given in this table are also exclusive of the same items referred to in connection with the preceding table.

## COMMONWEALTH MINERAL PRODUCTION TO END OF 1910.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.*	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Gold ...	57,991,493	287,523,134	72,099,528	2,889,917	98,027,411	7,113,874	525,645,357
Silver and lead ...	53,823,556	215,600	2,044,036	412,387	636,728	5,696,289	62,828,596
Copper ...	10,614,209	213,673	8,098,768	27,276,490	974,410	9,407,888	56,585,438
Tin ...	8,682,446	773,530	7,438,354	278,997	928,327	10,578,014	28,679,668
Coal ...	62,260,508	1,901,927	4,714,973	...	822,424	522,181	70,223,013
Other ...	13,368,512	370,343	1,671,721	1,272,376	74,122	482,534	17,239,608
Total ...	206,740,724	290,998,207	96,067,390	32,130,167	101,463,422	33,800,780	761,200,680

\* Including Northern Territory.

The "other" minerals in New South Wales include antimony, £302,859; bismuth, £125,527; chrome, £101,108; diamonds, £114,343; opal, £1,237,899; oil shale, £2,251,081; and zinc, £4,358,691. In the Victorian returns antimony ore was responsible for £215,784. Included in "other" in the Queensland production were opal, £166,195; gems, other, £161,793; bismuth and wolfram, £735,742; antimony ore, £50,881; manganese, £59,407; limestone flux, £227,335; and ironstone flux, £182,584. The chief item in South Australian "other" minerals was salt, £734,594. In the Tasmanian returns limestone flux was responsible for nearly £100,000.

It will be convenient in the succeeding pages to deal first with gold and the various metals, then with non-metallic minerals and precious stones, and finally to furnish some account of the extent of employment in mining generally.

## (A) METALS.

## § 2. Gold.

**1. Discovery of Gold in Various States.**—The discovery of gold in payable quantities was an epoch-making event in Australian history, for as one writer aptly phrases it, this event "precipitated Australia into nationhood." A more or less detailed account of the finding of gold in the various States appears under this section in each of the preceding Official Year Books, but considerations of space preclude the retention of this matter in the present issue.

**2. Production of Gold at Various Periods.**—In the table hereunder will be found the value of the gold raised each year in the several States and in the Commonwealth from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret. For South Australia the records in the earlier years are somewhat irregular, and the remark applies to some extent also to the returns for Western Australia and Tasmania.

In New South Wales the yield for 1910 was much below the average, the output from the more important centres, with the exception of Cobar and Hillgrove, showing a considerable falling-off. In Victoria the decrease was mainly due to the falling-off in the returns from the lode mines at Bendigo, Ballarat, Maldon, and Berringa, and the deep alluvial mines at Rutherglen, Creswick, and Clunes. The deficiency in Queensland was due to the reduced returns from Charters Towers, Gympie, and Ravenswood. At Gympie, in common with other centres, the gradual depletion of the richer ore renders increasing attention necessary to the problem of profitably dealing with the low grade material. The fall in the gold production in Western Australia is attributable to a decline in the yield for two or three mines, the most marked decreases being in the Peak Hill, East Coolgardie, and East Murchison fields.

## VALUE OF GOLD RAISED IN AUSTRALIA, 1851 to 1910.

Year.	N.S.W.	Victoria.	Q'sland.	S.A.	W.A.	Tas.	N.T.	C'wealth.
	£	£	£	£	£	£	£	£
1851 ...	468,336	851,596	...	...	...	...	...	1,319,932
1852 ...	2,660,946	9,146,140	...	...	...	...	...	11,807,086
1853 ...	1,781,172	10,976,392	...	...	...	...	...	12,757,564
1854 ...	773,209	8,873,932	...	...	...	...	...	9,647,141
1855 ...	654,594	11,277,152	...	...	...	...	...	11,931,746
1856 ...	689,174	12,214,976	...	8,800	...	...	...	12,912,950
1857 ...	674,477	11,320,852	...	876	...	...	...	11,996,205
1858 ...	1,104,175	10,384,924	...	12,348	...	...	...	11,491,447
1859 ...	1,259,127	9,394,812	...	730	...	...	...	10,654,669
1860 ...	1,465,373	8,896,276	11,631	...	...	...	...	10,373,280
1861 ...	1,806,171	8,140,692	3,137	...	...	...	...	9,950,000
1862 ...	2,467,780	6,920,804	499	12,442	...	...	...	9,401,525
1863 ...	1,796,170	6,779,276	11,820	...	...	...	...	8,587,266
1864 ...	1,304,926	6,489,788	66,513	...	...	...	...	7,861,227
1865 ...	1,231,243	6,446,216	74,216	...	...	...	...	7,751,075
1866 ...	1,116,404	6,187,792	68,325	...	...	...	...	7,372,521
1867 ...	1,053,578	6,005,784	151,125	...	...	4,382	...	7,214,869
1868 ...	994,665	6,739,672	473,956	2,936	...	2,536	...	8,213,765
1869 ...	974,149	6,179,024	417,681	15,593	...	514	...	7,586,961
1870 ...	931,016	5,217,216	390,925	24,217	...	7,475	...	6,570,849
1871 ...	1,250,485	5,475,768	492,635	6,000	...	14,218	...	7,239,106
1872 ...	1,644,177	5,325,508	527,365	6,363	...	16,055	...	7,519,468
1873 ...	1,396,375	4,681,588	572,996	293	...	18,390	...	6,669,642
1874 ...	1,041,614	4,390,572	1,062,899	4,175	...	18,491	...	6,537,751
1875 ...	877,694	4,273,668	1,196,583	7,034	...	11,982	...	6,366,961
1876 ...	613,190	3,855,040	1,140,282	9,888	...	44,923	...	5,663,323
1877 ...	471,448	3,238,612	1,043,780	...	...	23,289	...	4,777,129
1878 ...	430,200	3,092,160	1,149,240	1,225	...	100,000	...	4,712,825
1879 ...	407,219	3,035,788	1,034,216	90	...	230,895	...	4,708,208
1880 ...	444,253	3,316,484	944,869	...	...	201,297	...	4,906,903
1881 ...	573,582	3,933,512	957,570	880	...	216,901	111,945	5,194,390
1882 ...	526,522	3,458,440	785,868	3,080	...	187,337	82,274	5,043,521
1883 ...	458,530	3,121,012	736,810	10,534	...	176,442	77,195	4,580,523
1884 ...	396,059	3,114,472	1,062,471	15,469	...	160,404	77,935	4,826,810
1885 ...	378,665	2,940,872	1,062,514	18,295	...	155,309	70,414	4,626,069
1886 ...	366,294	2,660,784	1,187,189	32,535	1,148	117,250	63,139	4,428,339
1887 ...	394,579	2,471,004	1,481,990	72,003	18,517	158,533	68,774	4,665,400
1888 ...	317,241	2,500,104	1,690,477	34,205	13,273	147,154	34,802	4,737,256
1889 ...	434,784	2,459,352	2,695,629	37,305	58,871	119,703	47,651	5,853,295
1890 ...	460,255	2,354,240	2,182,563	20,808	86,664	75,888	80,769	5,261,217
1891 ...	559,231	2,305,596	2,030,312	27,380	115,182	145,459	98,701	5,281,661
1892 ...	575,299	2,617,824	2,164,391	26,097	226,284	158,917	109,658	5,878,470
1893 ...	651,286	2,684,504	2,167,794	12,561	421,385	141,326	108,130	6,186,986
1894 ...	1,156,717	2,867,816	2,330,282	33,401	877,099	217,024	109,699	7,502,038
1895 ...	1,315,929	2,960,344	2,150,561	26,060	879,748	206,115	102,816	7,641,573
1896 ...	1,073,360	3,220,348	2,132,979	14,350	1,068,808	237,574	81,210	7,828,629
1897 ...	1,104,315	3,251,064	2,552,668	39,020	2,564,977	296,660	81,210	9,889,914
1898 ...	1,201,743	3,349,028	2,750,348	10,676	3,990,698	291,496	84,789	11,678,778
1899 ...	1,623,320	3,418,000	2,838,446	15,582	6,246,732	327,545	63,565	14,533,190
1900 ...	1,070,920	3,229,628	2,871,578	14,494	6,007,610	316,220	67,988	13,578,438
1901 ...	737,164	3,102,753	2,541,764	16,613	7,235,653	295,176	76,609	14,005,732
1902 ...	684,970	3,062,028	2,720,512	24,878	7,947,661	301,573	70,325	14,811,947
1903 ...	1,080,029	3,259,482	2,839,801	28,650	8,770,719	254,403	61,600	16,294,684
1904 ...	1,146,109	3,252,045	2,714,934	76,025	8,424,226	280,015	5,983	15,897,337
1905 ...	1,165,013	3,173,744	2,517,295	45,853	8,305,654	312,380	30,971	15,550,910
1906 ...	1,078,866	3,280,478	2,313,464	27,000	7,622,749	254,963	54,225	14,631,745
1907 ...	1,050,730	2,954,617	1,978,938	20,540	7,210,749	277,607	21,928	13,515,109
1908 ...	954,854	2,849,838	1,975,554	12,300	6,999,882	242,482	23,943	13,058,853
1909 ...	869,546	2,778,956	1,935,178	30,206	6,776,274	190,201	24,148	12,604,509
1910 ...	802,211	2,422,745	1,874,955	28,000	6,246,848	157,370	21,711	11,553,840
Total £	57,991,493	287,523,134	72,099,528	877,810	98,027,411	7,113,874	2,012,107	525,645,357

The amount of gold raised in the Commonwealth in any one year attained its maximum in 1903, in which year Western Australia also reached its highest point. For the other States of the Commonwealth the years in which the greatest yields were obtained, were as follows:—New South Wales, 1852, Victoria, 1856, Queensland, 1900, South Australia, 1904, and Tasmania, 1899.

The following table shews the quantity in fine ounces of gold raised in each State and in the Commonwealth during each of the last ten years, the value of one ounce fine being £4 4s. 11½d.

## QUANTITY OF GOLD PRODUCED IN THE COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Queensland.	*S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
1901	173,543	730,450	598,382	21,946	1,703,417	69,490	3,297,228
1902	161,256	720,863	640,463	22,413	1,871,039	70,996	3,487,030
1903	254,260	767,347	668,546	21,247	2,064,803	59,892	3,836,095
1904	269,817	765,596	639,150	18,835	1,983,230	65,921	3,742,549
1905	274,267	747,163	592,622	18,086	1,955,317	73,540	3,660,995
1906	253,987	772,290	544,636	19,122	1,794,548	60,023	3,444,606
1907	247,363	695,576	465,882	9,998	1,697,555	65,354	3,181,728
1908	224,792	670,909	465,085	8,532	1,647,912	57,085	3,074,315
1909	204,708	654,222	455,579	12,796	1,595,270	44,777	2,967,352
1910	188,857	570,362	441,402	11,703	1,470,633	37,048	2,720,005

\* Including Northern Territory—Production in 1910, 5111 ozs.

3. **Changes in Relative Positions of States as Gold Producers.**—A glance at the figures in the table shewing the value of gold raised will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached the State each year. With the exception of the year 1889, when its output was surpassed by that of Queensland, Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was outstripped by that of Western Australia, the latter State from this year onward contributing practically half the entire yield of the Commonwealth. New South Wales occupied the second place on the list until 1874, when Queensland returns exceeded those of the parent State, a condition of things that has been maintained ever since. Up to the year 1884 Tasmania and South Australia (including Northern Territory) in turn occupied the position of lowest contributor to the total gold yield of the Commonwealth, but from 1894 onwards the returns from the former State have been in excess of those of the latter. Taking the average of the last ten years the relative positions of each State in regard to the gold production of the Commonwealth were as follows:—

## RELATIVE POSITION OF STATES AS GOLD PRODUCERS, 1902 to 1910.

State.	Annual Average of Gold Production, 1902 to 1910.	Percentage on Commonwealth.	State.	Annual Average of Gold Production, 1902 to 1910.	Percentage on Commonwealth.
	£			£	
Commonwealth ...	14,492,467	100.00	New South Wales	956,949	6.74
Western Australia	7,554,042	53.22	Tasmania ...	256,617	1.81
Victoria	3,013,669	21.24	South Australia *	69,951	0.49
Queensland	2,341,239	16.50			

\* Including Northern Territory.

4. **Methods of Gold Mining adopted in Each State.**—The circumstances of gold mining in the various States are not quite identical, for which reason reference is made to that of each State.

(i.) *New South Wales.* In New South Wales the earlier "rushes" were to surface alluvial or shallow-sinking grounds. Many of these were apparently soon worked out, but there is reason to believe that in some instances payable results would be obtained by treating the rejected wash-dirt on more scientific principles. With the exhaustion of the surface deposits discoveries were made by sinking to what are called deep alluvial leads, representing the beds of old drainage channels in Pliocene times. The first of these deep alluvial leads was discovered at Forbes, in New South Wales, in 1862. The Tertiary deep leads at Gulgong were discovered in 1871. Cretaceous leads occur at Tibooburra, and detrital gold has been found in Permo-carboniferous conglomerates at Tallawang. The method of dredging is at present being extensively used for winning gold from the beds

of running streams, and also in loose river flats and other wet ground where sinking would be impracticable. The system was introduced from New Zealand, where it was originally applied with great success on the Clutha River, and there are now dredges working on practically all the auriferous rivers of New South Wales. Hydraulic sluicing is also employed in several places, the necessary machinery being fitted to a pontoon for convenience in moving from place to place. The quantity of alluvial gold obtained, other than by dredging, amounted to 8505 ozs. in 1910, the chief yields being—Braidwood, 766 ozs.; Windeyer, 660 ozs.; Rockley, 643 ozs.; Hill End, 587 ozs.; and Uralla, 547 ozs. The quantity obtained by dredging was 31,487 ozs.; the largest returns being obtained at Araluen, 10,520 ozs.; Adelong, with 9322 ozs.; Wellington, 4113 ozs.; Braidwood, 3481 ozs.; Sofala, 1259 ozs.; and Stuart Town, 1181 ozs. The dredges in operation during 1910 numbered 70, of which 26 were of the bucket type and 44 were pumping plants. The value of the plants in operation (including recovery plants) was estimated at £364,255. The quantity of gold won from quartz amounted to 133,974 ozs. At the present time the Cobar district is the chief centre of the production from quartz, the yields from the Cobar and Canbelego fields included therein being respectively 37,101 ozs. and 31,433 ozs. Next comes the Hillgrove field, with 9767 ozs.; Wyalong, 9001 ozs.; Wellington, 8601 ozs.; Peak Hill, 6393 ozs.; and Murrumburrah, 5415 ozs.

The table below shews as far as can be ascertained the yield from alluvial and quartz working in each of the principal districts during 1910. Owing to the circumstance that it was impossible to obtain complete returns from the whole of the mine and battery owners the total for the State necessarily falls short of that given in preceding pages.

#### GOLD WON IN NEW SOUTH WALES, ALLUVIAL AND QUARTZ, 1910.

District.	Alluvial.		Quartz.	Total
	Other than by Dredging.	By Dredging.		
	ozs.	ozs.	ozs.	ozs.
Albert ... ..	350	...	1,852	2,202
Bathurst ... ..	1,229	182	7,399	8,810
Clarence and Richmond ... ..	108	...	564	672
Cobar ... ..	...	...	68,626	68,626
Hunter and Macleay ... ..	11	...	99	110
Lachlan ... ..	220	...	18,948	19,168
Mudgee ... ..	1,440	4,113	15,406	20,959
New England ... ..	120	30	150	300
Peel and Uralla ... ..	1,222	741	10,440	12,403
Southern ... ..	1,295	14,001	7,491	22,787
Tambaroora and Turon ... ..	1,348	2,440	884	4,672
Tumut and Adelong ... ..	1,162	9,980	2,115	13,257
Total ... ..	8,505	31,487	133,974	173,966

(ii.) *Victoria.* Quartz-reefing predominates in Victoria, although a considerable amount of gold is obtained from alluvial workings, both surface and deep leads. The deepest mines in Australia are found in the Bendigo district, where the two deepest shafts were at the 31st December, 1910, 4614 and 4318 feet deep respectively. Altogether there were at the close of 1910 no less than fifty-three shafts in this district which had reached a depth of over 2000 feet. A considerable amount of attention is given to dredging and hydraulic sluicing, particularly in the Beechworth, Gippsland, Castlemaine, and Ballarat districts, the number of plants in operation at the end of 1910 being 107. The total quantity of gold won from dredge mining in 1910 was 87,156 ounces, and from sluicing 1163 ounces, the total area treated being 704 acres. The yields from alluvial

workings and quartz reefs as returned (in crude ounces) from the chief mining districts of the State during last year were as follows:—

### GOLD WON IN VICTORIA, ALLUVIAL AND QUARTZ, 1910.\*

District.	Alluvial.	Quartz.	Total.
	ozs.	ozs.	ozs.
Ararat and Stawell ... ..	15,003	4,728	19,731
Ballarat ... ..	27,688	74,437	102,125
Beechworth ... ..	88,661	17,178	105,839
Bendigo ... ..	1,993	177,157	179,150
Castlemaine ... ..	19,534	54,889	74,423
Gippsland ... ..	7,597	31,625	39,222
Maryborough ... ..	43,222	30,265	73,487
Total ... ..	203,698	390,279	593,977

\* As returned in crude ounces from chief mining districts.

The largest output from lode mines in 1910 was furnished by the Long Tunnel, at Walhalla, with 13,877 ozs.; followed by the Lord Nelson, St. Arnaud, with 11,622 ozs.; the Ajax, Daylesford, with 10,659 ozs.; and the Catherine Reef, Bendigo, with 10,541 ozs. Of the deep alluvial mines the Duke and Main Leads Consols, at Maryborough, produced 16,056 ozs., and the Cathcart, at Ararat, 11,055 ozs. In dredging, the Tewkesbury Amalgamated, at Bright, headed the list with a return of 4161 ozs.

(iii.) *Queensland.* Operations in Queensland are at present chiefly confined to quartz reefing, the yield from alluvial in 1910 being only 6286 ounces, while the quantity produced from quartz was 301,669 ounces; from copper and other ores 120,103 ounces; and from old tailings 13,342 ounces; making a total production of 441,400 ounces, valued at £1,874,955. The yields from the principal fields are given below:—

### GOLD WON IN QUEENSLAND, ALLUVIAL AND QUARTZ, 1910.

District.	Alluvial.	Quartz.	From Copper and other Ores and old Tailings.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.
Charters Towers ... ..	631	143,010	3,843	147,484
Gympie ... ..	271	58,903	31	59,205
Mount Morgan ... ..	65	57,713	100,775	158,553
Ravenswood ... ..	424	21,121	...	21,545
Croydon ... ..	4	4,760	2,562	7,326
Clermont ... ..	2,590	...	...	2,590
Etheridge and Woolgar ... ..	1,365	8,779	9,792	19,936
Cloncurry ... ..	44	...	3,622	3,666
Gladstone ... ..	170	2,187	929	3,286
Rockhampton ... ..	73	33	8,176	8,282
Other districts ... ..	649	5,163	3,715	9,527
Total ... ..	6,286	301,669	133,445	441,400

(iv.) *South Australia.* In South Australia alluvial gold has been worked for many years in the gullies round Adelaide, while a fair amount of gold has been obtained by this method at Teetulpa, in the northern areas. There are some valuable reefing fields



in the Echunga district, at Mt. Grainger, Barossa, Wadnaminga, Mannahill, etc., but they have not been developed to the extent they deserve. Good stone was discovered a few years ago at Tarcoola, but the present returns are comparatively small. The rich finds at Arltunga in the centre of the continent, within the boundaries of the Northern Territory, have not yielded up to expectations, but the field has not been systematically prospected. It is stated that the gold occurs chiefly in vughs, crevices, and cellular quartz, the latter being at times exceedingly rich. The solid stone is low grade and is not worked. Operations are confined to the vein matter, which is passed through screens, and the larger lumps hand picked, the fines and all that contains vughs or cellular quartz being saved for treatment and the balance discarded. South Australia is not divided into mining districts as is the case in the other States. The Macdonnell Ranges, although within the boundaries of the Northern Territory and coming under the operation of the Northern Territory Mining Act, yet geographically belong to South Australia proper. The total output of gold for 1910 from the Northern Territory amounted to 5111 ounces, valued at £21,711.

(v.) *Western Australia.* In Western Australia the operations are confined principally to quartz reefing, the returns from ordinary alluvial and hydraulic sluicing being comparatively small. Estimates give the average value of ore treated in 1910 as 41.5 shillings as compared with 42.6 shillings in 1909. The total production of gold from all sources during last year was 1,470,632 ounces, of which only 0.4 per cent. was alluvial. Although Western Australia shared in the general decline in gold production which characterised the whole of the Commonwealth in 1910, the prospects at the end of that year were more or less encouraging. Rich discoveries at the Yilgarn field caused an inflow of fresh capital, and this was added to by finds in the Meekatharra, Black Range, Youanmi, and Ora Banda districts. Encouraging results attended deep sinking at the Great Fingall mine, and it is believed that energetic prospecting will be undertaken in the deep levels in the Kalgoorlie district. The production of gold on the various gold-fields during the year 1910 was as follows:—

#### GOLD WON IN WESTERN AUSTRALIA, ALLUVIAL AND QUARTZ, 1910.

Goldfields.				Alluvial.	Dollied and Spechnens.	Crushed.	Total.
				Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
East Coolgardie	...	...	...	901	757	776,822	778,480
East Murchison	...	...	...	347	1,597	128,427	130,371
Mount Margaret	...	...	...	558	1,052	158,671	160,281
Murchison	...	...	...	476	1,199	122,676	124,351
North Coolgardie	...	...	...	246	287	72,215	72,748
Coolgardie	...	...	...	796	74	37,041	37,911
Dundas	...	...	...	58	342	29,227	29,627
North-east Coolgardie	...	...	...	259	1,248	21,520	23,027
Yilgarn	...	...	...	...	72	27,786	27,858
Broad Arrow	...	...	...	351	602	14,529	15,482
Peak Hill	...	...	...	89	723	3,515	4,327
Pilbara	...	...	...	885	297	4,188	5,370
Phillips River	...	...	...	18	48	8,129	8,195
Yalgoo	...	...	...	26	34	1,272	1,332
West Pilbara	...	...	...	175	...	1,309	1,484
Ashburton	...	...	...	248	...	...	248
Kimberley	...	...	...	266	...	...	266
Other goldfields	...	...	...	27	...	846	873
Total	...	...	...	5,726	8,332	1,408,173	1,422,231

The figures in the above table are compiled from returns from the individual mines and are somewhat incomplete ; the total is therefore less than the total shewn on page 487 from mint and export returns.

(vi.) *Tasmania.* The yield from Tasmania is also chiefly obtained from quartz reefing, although there is a little alluvial mining carried on in the Lisle district. The yields as returned from the chief centres in 1910 are shewn hereunder :—

#### GOLD WON IN TASMANIA, ALLUVIAL AND QUARTZ, 1910.

Description.			Northern & Southern.	North-eastern.	Eastern.	Western.	Total.
			ozs.	ozs.	ozs.	ozs.	ozs.
Quartz	...	...	23,473	...	1,434	11,851*	36,758
Alluvial	...	...	199	118	...	127	444

\* Gold contained in blister copper and silver-lead bullion.

The total production equalled 37,048 fine ounces, valued at £157,370.

5. **Remarkable Masses of Gold.**—Allusion has already been made in preceding Year Books to the discovery of “nuggets” and other remarkable masses of gold, but it is not proposed to repeat this information in the present issue.

6. **Modes of Occurrence of Gold in Australia.**—This subject has been alluded to at some length in preceding issues of the Year Book, but considerations of space will not permit of repetition in the present issue.

7. **Place of Commonwealth in the World's Gold Production.**—In the table given below will be found the estimated value of the world's gold production, and the share of the Commonwealth therein during the fourteen years 1897 to 1910. The figures given in the table have been compiled chiefly from returns obtained direct by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

#### WORLD'S GOLD PRODUCTION, 1897 to 1910.

Year.				World's Production of Gold.	Gold produced in Commonwealth.	Percentage of C'wealth on Total.
				£	£	%
1897	...	...	...	48,196,000	9,890,000	20.52
1898	...	...	...	58,136,000	11,679,000	20.09
1899	...	...	...	63,015,000	14,533,000	23.06
1900	...	...	...	52,086,000	13,578,000	26.07
1901	...	...	...	53,339,000	14,006,000	26.26
1902	...	...	...	60,619,000	14,812,000	24.43
1903	...	...	...	66,761,000	16,295,000	24.41
1904	...	...	...	70,554,000	15,897,000	22.53
1905	...	...	...	76,839,000	15,551,000	20.24
1906	...	...	...	83,180,000	14,632,000	17.59
1907	...	...	...	84,770,000	13,515,000	15.94
1908	...	...	...	90,370,000	13,059,000	14.45
1909	...	...	...	91,910,000	12,605,000	13.71
1910	...	...	...	94,193,000	11,554,000	12.27

While the production of gold in the Commonwealth rose by about 17 per cent. in the fourteen years from 1897 to 1910, the world's total increased by about 95 per cent. in the same period. The following table will be found interesting, as shewing the various foreign countries where the chief increases have taken place during the interval in question:—

#### INCREASE IN GOLD YIELD, VARIOUS COUNTRIES, 1897 to 1910.

Country.	1897.	1900.	1908.	1909	1910.
	£	£	£	£	£
United States ...	11,787,000	16,269,000	19,566,000	20,418,000	19,764,000
Canada ...	1,240,000	5,742,000	2,025,000	1,930,000	2,098,000
Mexico ...	2,045,000	1,884,000	4,137,000	4,582,000	4,930,000
Transvaal ...	11,654,000	1,481,000	29,973,000	30,988,000	31,973,000
Rhodesia ...	800	308,000	2,526,000	2,624,000	2,568,000
Gold Coast ...	85,000	38,000	1,195,000	979,000	780,000
Madagascar ...	8,500	142,000	345,000	434,000	434,000
India ...	1,571,000	1,893,000	2,178,000	2,070,000	2,203,000
Korea ...	208,000	371,000	480,000	390,000	522,750
Japan ...	142,000	290,000	457,000	520,000	518,000
Java ...	24,000	112,000	610,000	630,000	723,000
Costa Rica ...	2,000	31,000	122,000	116,000	96,000

The largest increase was recorded in the Transvaal, where the production nearly trebled itself in the fourteen years 1897 to 1910.

8. **Employment in Gold Mining.**—The number of persons engaged in gold mining in each State during the last ten years is shewn in the following table:—

#### PERSONS EMPLOYED IN GOLD MINING, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
	No.	No.	No.	No.	No.	No.	No.
1901 ...	12,064	27,387	9,438	1,000	19,771	1,112	70,772
1902 ...	10,610	26,151	9,045	1,000	20,476	1,038	68,320
1903 ...	11,247	25,208	9,229	1,000	20,716	973	68,373
1904 ...	10,648	24,331	9,620	1,000	18,804	1,076	65,479
1905 ...	10,309	25,369	10,041	900	18,382	1,207	66,808
1906 ...	8,816	25,304	9,842	900	17,926	988	63,776
1907 ...	7,468	23,291	8,883	914	17,237	953	58,746
1908 ...	6,363	20,853	7,736	1,213	16,075	843	53,083
1909 ...	5,585	18,671	7,150	1,177	17,027	713	50,323
1910 ...	5,247	16,553	6,115	*1,256	16,279	682	46,132

\* Including 306 miners in Northern Territory.

### § 3. Platinum and the Platinoid Metals.

1. **Platinum.**—The existence of platinum was first noted in New South Wales in 1851 by Mr. S. Stutchbury, who found a small quantity near Orange. Since the year 1878 small quantities of the metal have been obtained from beach sands in the northern coastal district. Platiniferous ore was noted in 1889 at Broken Hill. The chief deposits at present worked in the State are situated at Fifield, near Parkes, but the entire production in 1910 was small, amounting to only 332 ozs., valued at £1418, while the total production recorded to the end of 1910 amounted to 11,910 ozs., valued at £22,131.

Operations were somewhat retarded in 1910 owing to the low average rainfall; nevertheless the production was smaller than might reasonably have been expected in view of the rise in price of the metal.

In Victoria the metal has been found in association with copper at the Walhalla Copper Mine in Gippsland. The mine was worked extensively from 1874 to 1881 and then abandoned, but was reopened in 1910. It is stated that there are 70,000 tons of ore in sight, assaying three to four per cent. copper, and containing also platinum and silver.

**2. Osmium, Iridium, etc.**—Small quantities of osmium, iridium, and rhodium are also found in various localities. As far back as 1860, the Rev. W. B. Clarke states that he found native iridium. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban, on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

#### § 4. Silver.

**1. Occurrence in Each State.**—(a) *New South Wales.* The occurrence of silver in New South Wales was first mentioned by Count Strzelecki in a letter addressed to Captain King, R.N., dated the 26th October, 1839. In his work, "The Southern Gold-fields," published in 1860, the Rev. W. B. Clarke also mentions a discovery of the metal. Since that date silver has been found in a large number of localities throughout the State. The Broken Hill field, the chief lode of which was discovered in 1882 by Mr. Charles Rasp, constitutes one of the richest and most productive mining centres in the world. Further reference to the production from the Broken Hill district will be made on a subsequent page. Amongst other important finds in New South Wales may be mentioned Boorook, near Tenterfield, discovered in 1878; Sunny Corner, originally worked for gold in 1875; Emmaville, 1884; Rivertree, on the Clarence River, 1887; Borah Creek, near Inverell, 1870; Rockvale, 1895.

(b) *Victoria.* Mining for silver is not carried on to any extent in Victoria, the production recorded in the mining returns being chiefly obtained in the process of refining gold, and the same applies in the case of the production from Western Australia.

(c) *Queensland.* In Queensland most of the important gold mines yield also supplies of silver, but the credit of establishing the silver mining industry *per se* belongs to the Ravenswood field, where in 1879 the recovery of a parcel of 40 tons of galena assaying 130 ozs. of silver to the ton, marked the opening of the industry. At Chillagoe in 1884 there were thirty-two silver-lead shows being worked, while during the decade 1885-1895 over 1½ million ozs. were raised at the Mount Albion mine. The Mungana mines are the mainstay of the Chillagoe district, and large deposits of silver and copper are still available in the Lady Jane and Girofla mines. On the Etheridge field silver-lead constitutes a fair proportion of the production, and a group of mines at Mosquito Creek, about twelve miles from Charleston, will considerably aid the output. In 1910 the total quantity of silver produced in Queensland was 861,202 ozs., valued at £92,685.

(d) *South Australia.* In South Australia silver-lead is found in the main range, south of Adelaide. The Wheal Gawl mine, near Glen Osmond, opened in 1841, was probably the first mine worked in the Commonwealth. Silver-lead deposits have also been noted north-east from Farina and west from Beltana. A small amount of silver-lead is also obtained in the Northern Territory.

(e) *Tasmania.* Tasmania is the only State in the Commonwealth besides New South Wales which produces any considerable quantity of silver. The famous Zeehan mine, on the west coast, was discovered in 1885, and the deposits at Heazlewood River in 1887. Both districts are still opening up rich deposits of ore.

2. **Development of Silver Mining.**—In illustration of the development of silver mining in Australia the following table has been compiled, shewing the production of silver, silver-lead and ore, and lead from each State during the years 1881, 1891, and 1901 to 1910:—

**PRODUCTION OF SILVER AND LEAD, AUSTRALIA, 1881 to 1910.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1881 ...	...	5,239	13,494	1,182	11,224	...	31,139
1891 ...	3,621,614	6,017	21,879	5,927	250	62,138	3,717,825
1901 ...	1,954,964	6,550	69,234	3,886	7,718	325,335	2,367,687
1902 ...	1,487,837	4,900	72,851	42,063	9,467	387,024	2,004,142
1903 ...	1,539,989	4,898	109,177	10,870	19,153	428,125	2,112,212
1904 ...	2,131,504	4,990	96,418	1,387	45,912	318,971	2,599,182
1905 ...	2,496,709	4,100	102,388	3,244	44,278	415,248	3,065,967
1906 ...	2,864,057	4,980	151,577	12,982	37,612	552,704	3,623,912
1907 ...	4,290,128	4,355	187,870	13,873	26,674	572,560	5,095,460
1908 ...	2,346,941	2,835	206,716	9,030	23,883	322,007	2,911,412
1909 ...	1,839,688	2,310	167,636	673	19,977	298,880	2,329,164
1910 ...	2,110,040	2,090	123,086	907*	20,210	247,576	2,503,909

\* No production in 1910 in Northern Territory.

The figures quoted for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State. In explanation of the values thus given, it must be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State are extracted outside New South Wales, and it is considered, therefore, that the State should not take full credit for the finished product. Hence the *net* value referred to above relates to that of the ore, concentrates, and bullion, as declared by the several companies to the Customs Department at date of export. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the quantity and value of these metals locally produced, and the quantity and value of concentrates exported during the last seven years, will shew the estimated total value of the yield:—

**VALUE OF PRODUCTION FROM SILVER-LEAD MINES OF NEW SOUTH WALES,  
1904 TO 1910.**

Year.	Value of Silver, Lead, and Spelter produced within the C'wealth.	Value of Concentrates Exported.	Total.
	£	£	£
1904 ...	2,088,784	642,125	2,730,909
1905 ...	2,131,317	1,181,720	3,313,037
1906 ...	2,112,977	1,876,834	3,989,811
1907 ...	2,228,420	3,574,775	5,803,195
1908 ...	2,008,410	2,400,997	4,409,407
1909 ...	1,176,394	2,707,630	3,884,074
1910 ...	1,755,220	3,180,850	4,936,070

As regards silver alone, the following table, which has been prepared on a basis similar to that on which the preceding table was compiled, shews the estimated total quantity and value of that metal yielded by the mines of New South Wales up to the end of 1903 and during the last seven years:—

**ESTIMATED QUANTITY AND VALUE OF SILVER YIELDED BY MINES OF NEW SOUTH WALES, TO END OF 1910.**

Period.	Produced in Australia.		Contained in Concentrates, etc., Exported.		Total Production.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Fine ozs.	£	Fine ozs.	£	Fine ozs.	£
To the end of 1903 ...	82,947,404	13,807,421	104,659,834	18,330,147	187,607,238	32,137,568
1904 ...	7,751,667	920,947	2,945,058	349,891	10,696,725	1,270,838
1905 ...	6,804,934	852,533	3,480,561	436,050	10,285,495	1,288,583
1906 ...	5,575,410	775,409	3,111,013	432,669	8,686,423	1,208,078
1907 ...	5,921,457	795,982	6,228,225	845,845	12,149,682	1,641,827
1908 ...	6,484,288	693,034	5,499,381	587,768	11,983,669	1,280,802
1909 ...	3,717,016	382,605	6,867,775	732,563	10,584,791	1,115,168
1910 ...	5,196,323	561,280	7,608,336	843,257	12,804,659	1,404,537
Total ...	124,398,499	18,789,211	140,400,183	22,558,190	264,798,682	41,347,401

Although no developmental work was done at the Proprietary Mine, which was practically idle throughout the year, the returns from the Broken Hill field for 1910 were considerably in advance of those for the two preceding years. Operations at the Proprietary were confined to retreatment of the surface dumps, but the smelters at Port Pirie were kept busily engaged, large quantities of ore and concentrates having been purchased from other mines and treated. The ore raised from the mines on the Broken Hill field amounted in 1910 to 1,243,684 tons, while the value of the output from all sources was £3,842,630.

In Tasmania the decrease was principally owing to the temporary stoppage of the Tasmanian Smelting Company's works, followed by the closing down of the Magnet and Hercules mines. The output of the Yerranderie field in New South Wales was not so large as in the previous year, operations being restricted owing to transport difficulties.

**3. Chief Centres of Silver Production.**—Broken Hill, in New South Wales, and Zeehan, in Tasmania, are the great centres of silver production in Australasia. The production in Queensland has, however, considerably expanded during the last few years.

(i.) *New South Wales.* (a) *Broken Hill.* The bulk of the production is, of course, from New South Wales, being contributed mainly by the mines in the celebrated Broken Hill district. A description of the silver-bearing area in this district is given in preceding issues of the Year Book.

Although the returns are not complete in all cases, the following table relating to the mines at Broken Hill will give some idea of the richness of the field:—

**RETURNS OF BROKEN HILL SILVER MINES, 1910.**

Mine.	Authorised Capital.	Value of Output to end of 1910.	Dividends and Bonuses Paid to end of 1910.
	£	£	£
Broken Hill Proprietary Co. Ltd. ...	384,000	33,051,904*	9,848,000†
Broken Hill Proprietary Block 14 Co. ...	155,000	3,283,136	459,827
British Broken Hill Proprietary Co. ...	264,000	2,071,243	337,500
Broken Hill Proprietary Block 10 Co. ...	1,000,000	3,685,729	1,235,000
Sulphide Corporation Ltd. (Central Mine) ...	1,100,000	11,142,907†	797,500
Broken Hill South Silver Mining Co. ...	200,000	3,620,500	755,000
North Broken Hill Mining Co. ...	175,000	1,469,487†	291,440
Broken Hill Junction Mining Co. ...	100,000	813,055†	85,000
Broken Hill Junction North Silver Mining Co. ...	180,000	960,401†	43,793
Broken Hill South Blocks Ltd. ...	200,000	525,176	...
Broken Hill South Extended Ltd. ...	337,500	150,344	50,000
Totals ...	4,095,500	60,773,882†	13,903,060

\* The value of the ores purchased during 1908, 1909, and 1910 is not included. † Incomplete.  
† Excluding nominal value of shares (£1,744,000) in Block 14, British, allotted to shareholders of Broken Hill Proprietary.

(b) *Yerranderie*. The mines on the Yerranderie field in the Southern Mining District produced 783,295 ozs. of silver in 1910, besides small quantities of gold and lead, the total production being valued at £113,071. It is stated that mining operations are carried on under considerable difficulties owing to the heavy cost of transport, and that the advent of a railway (the construction of which is proposed) would completely change the outlook.

(c) *Kangiarra*. The yield from the Kangiarra field, in the Yass district, consisted of 133,777 ozs. of silver, besides small quantities of other metals, the total production being valued at £69,000.

(d) *Conrad*. The ore raised by the Conrad Mines Ltd., at Howell, in the Tingha division, amounted in 1910 to 23,429 tons, valued at £40,483, of which lead concentrates accounted for £15,220; and copper matte, £22,420.

(ii.) *Tasmania, West Coast*. The silver-lead mines on the west coast are now well established. Amongst the most important are the Mt. Zeehan, Zeehan-Montana, Zeehan-Western, Oonah, Comet, Hercules, Adelaide, North Mt. Farrell, and Tasmanian Copper. The total production of silver-lead ore in 1910 was 51,227 tons, valued at £247,576, the continued decrease since 1907 being due to interruption of work at the Tasmanian Smelting Company's works. The difficulties between the smelters and the producers have now been arranged, and it is hoped that normal conditions will be regained.

(iii.) *Queensland*. The yield for the chief silver-producing centres in 1910 was as follows:—Chillagoe, £37,000; Charters Towers, £12,470; Stanthorpe, £10,000; Etheridge, £9000; and Herberton, £6000.

4. **World's Production of Silver.**—The world's production of silver during the last nine years is estimated to have been as follows:—

#### WORLD'S PRODUCTION OF SILVER, 1902 to 1910.

Year ... ..	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
World's production* in 1000 fine ozs. ...	163,937	173,222	176,840	181,338	184,552	183,386	212,570	227,291	233,650

\* Add 000 to figures for fine ounces.

Australasia's share in the world's silver production in 1910 was estimated at 14,422,000 ounces, or about  $6\frac{1}{2}$  per cent. on the total production.

5. **Prices of Silver.**—As the production of silver is dependent to a very large extent on the price realised, a statement of the average price per standard ounce paid by the London Mint at various periods and during the last six years is given below.

#### PRICE OF SILVER, 1871 to 1910.

Year ... ..	1871.	1881.	1891.	1901.	1904.	1906.	1907.	1908.	1909.	1910.
Pence per standard oz....	60 $\frac{1}{2}$	51 $\frac{1}{8}$	45 $\frac{1}{8}$	27 $\frac{3}{16}$	26 $\frac{3}{8}$	30 $\frac{7}{8}$	28 $\frac{5}{16}$	24 $\frac{1}{2}$	23 $\frac{11}{16}$	24 $\frac{11}{16}$

During the month of November, 1906, owing to the small sales in New York, and also to the fact that the Indian, American, and Mexican Governments were all buying silver, the price rose to 33 $\frac{3}{4}$ d., the highest realised since 1893, when the average stood at 36 $\frac{5}{16}$ d.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining during each year of the period 1901 to 1910 is given below:—

## NUMBER OF PERSONS EMPLOYED IN SILVER MINING, 1901 to 1910.

Year.	N S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.
1901 ..	6,298	...	40	150	...	2,414†	8,902§
1902 ...	5,382	...	100	150	...	2,893†	8,525§
1903 ...	6,035	...	458	150	...	1,681†	8,324§
1904 ...	7,071	...	45	50	...	1,101	8,267
1905 ...	7,887	...	293	50	...	1,512	9,742
1906 ...	9,414	13	282	50	...	1,745	11,504
1907 ...	10,021	10	785	86	8	1,908	12,818
1908 ...	7,560	3	496	51	5	1,740	9,855
1909 ...	6,207	...	354	40	5	1,516	8,122
1910 ...	7,999	...	590	125*	21	1,173	9,908

\* Including 60 miners in Northern Territory. † Including copper miners. § Including copper miners in Tasmania.

As the table shews, the bulk of the employment was in New South Wales and Tasmania, the quantity of silver raised in the other States, excepting Queensland, being unimportant.

## § 5. Copper.

1. **Production of Copper.**—The production of copper in the various States of the Commonwealth has been influenced considerably by the ruling prices, which have undergone extraordinary fluctuations. The quantity and value of the production in earlier years and for 1906 to 1910 is shewn in the following tables :—

## PRODUCTION OF COPPER, AUSTRALIA, 1881 to 1910.

State.	1881.	1891.	1901.	1906.	1907.	1908.	1909.	1910.
QUANTITY.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
N.S.W. { Copper	*	*	6,087	8,964	8,963	8,679	6,857	8,435
{ Ore			645	791	1,135	392	109	4,455
Victoria... { Copper			...	...	38	983	17	150
{ & Ore	*	*	...	...	...	...	...	...
Q'land ... { Copper	330	85	3,061	10,077	12,756	14,961	14,494	†16,387
{ Ore	3,824	3,551	6,736	8,406	8,763	6,152	5,776	5,199
S. Aust. ... { Copper	21,638	13,239	2,353	527	...	...	1,345	...
{ Ore	...	...	...	...	1,602	479	833	1,281
W. Aust. ... { Copper	...	*	10,157	7,430	3,727	2,503	6,959	6,309
{ Ore	...	...	9,730	8,613	9,035	8,833	8,638	8,864
Tasmania { Copper	...	...	10,029	2,235	...	1,185	1,588	...
{ Ore	...	...	...	...	...	...	...	...
C'wealth { Copper	...	...	25,614	36,060	46,019	44,167	36,598	40,166
{ Ore	...	...	23,184	10,983	...	...	10,018	10,914

\* Not available. † Including 97 tons of copper, Northern Territory.

## VALUE.

	£	£	£	£	£	£	£	£
New South Wales...	227,667	119,195	412,292	789,527	727,774	502,812	424,737	486,257
Victoria ...	8,186	216	...	...	2,356	3,928	44	450
Queensland ...	19,637	3,554	194,227	916,546	1,028,179	893,535	853,196	932,489
South Australia ...	418,296	235,317	500,077	743,671	705,031	345,968	342,329	*307,316
Western Australia ...	...	4,463	75,246	50,337	203,376	57,091	104,644	95,928
Tasmania ...	...	...	1,026,748	844,663	869,665	609,651	608,038	566,972
Commonwealth ...	673,786	362,745	2,208,590	3,344,744	3,536,382	2,412,985	2,332,988	2,389,412

\* Including £1196, Northern Territory.



2. *History.*—(i.) *New South Wales.* It is believed that copper was the first metal mined for in New South Wales, the earliest attempts at working taking place about the year 1844. The deposits at Copper Hill, near Molong, were worked in 1845, as well as those in the neighbourhood of Canowindra. In 1847 mining for copper was commenced at the Summerhill Estate, near Rockley. The Rev. W. B. Clarke reported the discovery of copper ores near Marulan in 1851, and at Quidong, in the Snowy River district, in 1852. The Mount Hope field was opened in 1878, Nymagee in 1880, and Lake George in 1882. The principal seat of the copper-mining industry at the present date is in the Cobar district, the value of the deposits there being first recognised in 1869. The value of the output of the Cobar district in 1910 was £282,348, out of a total for the State of £486,527. Operations at the Great Cobar Mines were to some extent interfered with in the early months of the year by the coal miners' strike, but the shortage in production was more than counterbalanced by the increased output later, the total for 1910 being 6248 tons of copper as compared with 4855 in 1909. Owing chiefly to the low price of copper, and the lack of railway facilities, the Nymagee, Shuttleton, Mount Hope and Burruga Mines remained closed down, while operations were conducted on a limited scale only at Girilambone.

From the Grafton Company's mine at Cangai a considerably augmented output was supplied, the production for the year being valued at £41,477. The Kyloe mine, in the Cooma division, contributed materially to the increased output, the production from this mine being valued at £83,372, as against £29,996 in 1909. The Electrolytic and Refining and Smelting Company of Australia Limited, established at Port Kembla, had a successful year, and in view of the increasing business it has been decided to double the capacity of the works. During 1910 the output of electrolytic copper was 9952 tons, most of which was made from blister copper produced at Mt. Morgan, Queensland.

(ii.) *Victoria.* In Victoria copper has been found at Bethanga, Sandy Creek, near Bogong, Walhalla on the Thomson River, and on the Snowy River and at Mount Tara near Buchan. The production shewn in the table was obtained from the old copper mine at Walhalla, which was reopened in 1910.

(iii.) *Queensland.* The first important discovery of copper in Queensland was made in the year 1862, when a rich lode was found near Clermont, on the Peak Downs. A further discovery was made during the same year at Mount Perry. Copper, tin, silver, and gold were found on the Herberton, Walsh, and Tinaroo mineral fields in 1879. The famous Mount Morgan gold mine, discovered in 1882, also produces a considerable amount of copper, the production therefrom in 1910 exceeding that from any other district. As compared with the previous year, the increase in production in 1910 was due principally to the activity at the Mount Elliot mine, at Cloncurry, and the Einasleigh mine, on the Etheridge field. The production in 1910 from the more important districts was as follows:—Mount Morgan, £364,933; Mount Perry, £55,290; Cloncurry, £185,162; Rockhampton, £89,993; Chillagoe, £106,632; Etheridge, £76,132; Gladstone, £28,874.

(iv.) *South Australia.* Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State in the Commonwealth. In recent years, however, Tasmania, Queensland, and New South Wales have come to the front as copper producers, as the table on the preceding page will shew. Deposits of copper ore are found over a large portion of South Australia. The Kapunda mine, discovered in 1842 by Messrs. Dutton and Bagot, is situated fifty miles north of Adelaide, and is the oldest copper mine in the State. Up to the end of 1879 the production amounted to 70,000 tons, the metal possessing such a high standard of purity that it always obtained the highest prices in the world's markets. During the nine years 1870 to 1878 the production was valued at £157,000. The Burra Burra mine, located in 1845 by a shepherd named Pickett, is situated about 100 miles north of Adelaide. The original capital invested in this mine was £12,320 in £5 shares, on which no call was ever made, while dividends to the amount of £800,000 were paid. For many years this mine produced from 10,000 to 13,000 tons of ore, averaging 22 to 23 per cent.

of copper. During the 29½ years in which the mine was worked the production was valued at £4,749,000. In 1859 as many as 1170 persons were employed on it. The mine has lain practically idle for many years, but recently there have been attempts at reworking.

Yorke's Peninsula, between Spencer's Gulf and St. Vincent's Gulf, contains a large area of copper-bearing country. The principal mines at Wallaroo and Moonta are situated a few miles from Port Wallaroo, and date back to 1860. For about thirty years the Moonta mines were worked independently, selling their ores to the Wallaroo company. During its separate existence the Wallaroo field produced about £2,600,000 worth of copper, while Moonta yielded £5,396,000, and was the first Australian mining field to produce £1,000,000 in dividends. The amalgamation took place in 1889, and since that year the united properties have produced about £4,281,000 worth of copper. The entire yield from the date of first working is estimated at about £12,500,000. The mines just enumerated represent a very small proportion only of those opened on the copper-bearing areas of the State. Owing to the depression in the price of copper in 1910 mining operations were considerably restricted, except at the old and well-established mines. The Paramatta and Yelta mines, in the Moonta district, have now been acquired by the Government for the sum of £6000.

Copper is also obtained in the Northern Territory; the actual output of ore for the year, however, was only £1196 in value. This poor result was entirely due to the low prices and high cartage rates from outlying fields from which, in the main, copper is produced.

(v.) *Western Australia.* The inception of active mining operations in Western Australia dates from the year 1842, when lead and copper mines were discovered in the Northampton district, but working was carried on in a most perfunctory manner in the early days, sinking being discontinued as soon as the lodes shewed signs of contraction. Rich lodes of copper have been located at Whim Creek, in the Pilbara district, about fifty miles eastward of Roeburne, the copper ore being removed by quarrying. Promising lodes have also been struck at the Irwin mines, between Arrino Springs and the Irwin River. The Kimberley district is intersected in places by copper and lead deposits in association with gold, and a rich lode has been located at Mount Barren, about 120 miles to the eastward of Albany, while various quartz reefs in the Wongan Hills contain copper in association with gold and iron. The centres of production in 1910 were the Phillips River field, with 25,872 tons copper ore, valued at £96,745, and the West Pilbara field, which yielded 8480 tons, valued at £64,861.

(vi.) *Tasmania.* For a long time Tasmania was the largest producer of copper in the Commonwealth, but during the last four years Queensland has occupied the premier position. The cupriferous area in the island State stretches from Mount Lyell, Mount Tyndall, Mount Read, and Mount Murchison, in the western district, to some distance north of the Pieman River. Copper mining has also been started on the north-west coast, notably in the Stowport and Blyth River districts, and some attention has been given to the deposits at Rocky Cape and Boat Harbour. In 1910 the output of the Mount Lyell Mining and Railway Co. Ltd. was 8,193 tons of blister copper, which contained copper valued at £483,806, silver £70,017, and gold £50,367. This company during the year paid £180,000 in dividends. A new copper field at Mount Balfour is attracting considerable attention. A number of sections have been taken up and are being systematically prospected.

The output for the year 1909 was valued at £608,038, which was £1613 less than the previous year, and £261,628 less than that of 1907. Several of the mines which in past years were large producers remained closed down during the whole of 1909, while, taken generally, work at other mines throughout the Commonwealth was, for a variety of reasons, only conducted on a limited scale.

**3. Price of Copper.**—The great variation in price that the metal has undergone is shewn in the following table, which gives the average price in London and New York

during the last ten years. The figures are given on the authority of "The Mineral Industry." Prices of standard and best selected copper are given in preceding Year Books at various periods since 1897.

### FLUCTUATION IN THE VALUE OF COPPER, 1901 to 1910.

Year.	London Price per Ton Standard Copper.	New York. Price in Cents. per lb.	
		* Lake Copper.	Electrolytic Copper.
	£	Cents.	Cents.
1901 ... ..	66.79	16.55	16.11
1902 ... ..	52.46	11.89	11.63
1903 ... ..	57.97	13.42	13.24
1904 ... ..	58.88	12.99	12.82
1905 ... ..	69.47	15.70	15.59
1906 ... ..	87.28	19.62	19.28
1907 ... ..	87.01	20.66	20.00
1908 ... ..	59.90	13.42	13.21
1909 ... ..	58.73	13.34	12.98
1910 ... ..	57.05	13.04	12.74

\* The term "Lake" copper is used to designate all copper sold in the trade as such, regardless of the process by which it is refined.

There is no doubt that the steady rise in the price of copper from the year 1902 onwards caused a large amount of overtrading with consequent unhealthy inflation of values, while the sudden drop in 1908 was directly due to the financial panic in America. It is believed, however, that the increasing demand for the metal in electrical and other industries will, under ordinary circumstances, tend in time to establish prices on a sounder basis, and at higher rates than those quoted for the last twelve months in the table above.

4. **Relationship to World's Production.**—The world's production of copper in 1901 and during the last five years is estimated to have been as follows:—

### WORLD'S PRODUCTION OF COPPER, 1901 to 1910.

Year ... ..	1901.	1905.	1906.	1907.	1908.	1909.	1910.
World's production— (short tons) ...	583,517	770,221	788,492	798,205	835,623	922,408	955,037

5. **Employment in Copper Mining.**—The number of persons employed in copper mining during the last nine years was as follows:—

### PERSONS ENGAGED IN COPPER MINING, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.
1901 ... ..	2,964	4	814	4,000	321	*	8,103†
1902 ... ..	1,699	...	666	4,000	113	*	6,478†
1903 ... ..	1,816	...	1,418	4,000	193	*	7,427†
1904 ... ..	1,850	...	1,094	4,000	169	925	8,038
1905 ... ..	2,171	...	1,435	4,500	125	2,269	10,500
1906 ... ..	3,047	3	2,598	5,000	296	2,391	13,335
1907 ... ..	3,764	10	3,941	5,254	611	2,614	16,194
1908 ... ..	2,745	9	3,540	4,558	283	2,076	13,211
1909 ... ..	2,024	2	3,241	4,504	497	2,038	12,306
1910 ... ..	2,286	40	2,418	‡4,199	559	2,042	11,544

\* Included with silver miners.

† Excluding Tasmania.

‡ Including 49 miners in Northern Territory.

## § 6. Tin.

1. **Production of Tin.**—The development of tin mining is, of course, largely dependent on the price realised for the metal, and, as in the case of copper, the production has been subjected to somewhat violent fluctuations. The table below shews the production in each of the Commonwealth States during the years 1881, 1891, 1901, and 1906 to 1910:—

## TIN PRODUCED IN AUSTRALIA, 1881 to 1910.

State.		1881.	1891.	1901.	1906.	1907.	1908.	1909.	1910.
QUANTITY.									
		Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	{ Ingots	5,824	1,454	648	1,161	1,331	954	951	847
	{ Ore	609	203	11	510	583	841	992	1,021
Victoria ...	Ore	†	†	77	106	104	79	89	41
Queensland*	Ore	†	†	1,661	4,823	5,140	4,885	3,326	2,953
South Australia	Ore	†	†	81	398	436	441	427	364
West Australia	Black tin	†	†	734	1,495	1,502†	1,093†	698†	500†
Tasmania ...	Ore	†	†	1,730	4,473	4,343	4,521	4,511	8,701
Commonwealth	{ Ingots, ore, etc.	†	†	5,002	12,966	13,439	12,814	10,994	14,427
VALUE.									
		£	£	£	£	£	£	£	£
New South Wales...	{ Ingots	531,303	124,320	76,060	205,373	229,697	126,292	127,089	127,700
	{ Ore	37,492	9,643	464	50,371	63,698	79,155	83,940	100,456
Victoria ...	Ore	7,334	5,062	4,181	11,644	10,531	6,070	7,067	3,706
Queensland	Ore	193,609	116,387	93,723	490,283	496,766	341,566	244,927	243,271
South Australia	Ore	...	1,938	5,586	36,907	41,365	35,876	32,741	31,113†
West Australia	Black tin	...	10,200	40,000	157,644	166,139	83,595	65,959	45,129
Tasmania ...	Ore	375,775	293,170	212,542	557,266	501,681	421,580	418,165	399,393
Commonwealth	...	1,145,603	560,750	432,576	1,509,488	1,509,787	1,094,134	979,888	950,768

\* Dressed tin ore, about 70% tin. † Tin ingot and ore. ‡ Not available.  
 † Obtained in Northern Territory.

2. **Sources of Production.**—(i.) *New South Wales.* The bulk of the yield in New South Wales comes from the Tingha-Inverell district, the production last year being £103,267, out of a total for the whole State of £228,156. Of the total production in 1910, £158,467, or about 70 per cent., represents the value obtained by dredging. In the Emmaville division the yield of ore was estimated at 788 tons, valued at £76,034, the increase on the previous years' return being due to the satisfactory results of dredging. The known alluvial deposits are, however, being steadily depleted, while the testing of deep alluvial leads has not given very encouraging results. During the year the Sydney Smelting Company at Woolwich produced 847 tons of tin, valued at £127,700, from ore mined in the State.

(ii.) *Victoria.* In Victoria lode tin has been discovered at Mt. Wills, Beechworth, Eldorado, Chiltern, Stanley, and other places in the north-eastern district; and stream tin has been found in a large number of places, including those just mentioned in the north-eastern district. The bulk of the production last year was obtained by dredging and hydraulic sluicing at Toora and Beechworth.

(iii.) *Queensland.* The increased price of the metal in 1910 led to renewed activity in the Herberton district, and several valuable deposits were located. The production from all sources in 1910 amounted to 2953 tons, valued at £243,271, more than half of which was produced at the Herberton mineral field.

(iv.) *Northern Territory.* Valuable lodes of tin are found in the Northern Territory at Mount Wells, West Arm and Bynoe Harbour, and at Horseshoe Creek, south of Pine Creek, but the deposits have not yet been exploited to the extent they deserve. In 1909 there were 355 miners engaged in tin mining in the Northern Territory, and the quantity of tin ores and concentrates exported was 427 tons. This production was largely due to the progress at the Mount Wells mine, where, it is stated, there are enormous bodies of payable material awaiting development.

The metal has also been discovered near Earea Dam in South Australia.

(v.) *Western Australia.* The production of tin ore and ingot for the State during 1910 amounted to 500 tons, valued at £45,129, to which the Greenbushes field contributed 318 tons, valued at £27,974. The Pilbara Goldfield (Marble Bar district) was the only other large contributor.

(vi.) *Tasmania.* Tin mining in Tasmania dates from the year 1871, when the celebrated Mount Bischoff mine was discovered by Mr. James Smith. This mine, which is probably the richest in existence, is worked as an open quarry, and a large proportion of the original hill has been removed in the course of developmental operations. Soon after 1871 deposits were located in the north-east district by Mr. G. B. Bell, while deposits of stream tin were discovered near St. Helens by Messrs. Wintle and Hunt. Further finds were reported from Flinders and Cape Barren Islands, and in 1875 the metal was discovered at Mount Heemskirk. The total production of Tasmania in 1910 was 3701 tons of ore, valued at £399,393, the largest producer being the Briseis Tin Mines Limited, in the North-east division, with a return of 646 tons. The Mount Bischoff mine paid dividends amounting to £39,000, making a total to the end of 1910 of £2,235,000.

3. **World's Production of Tin.**—According to "The Mineral Industry" the world's supplies of tin during each of the last five years were obtained as follows:—

#### THE WORLD'S TIN SUPPLIES, 1906 to 1910.

Origin	1906.	1907.	1908.	1909.	1910.
	Tons.	Tons.	Tons.	Tons.	Tons.
English production ... ..	4,522	4,407	5,052	5,198	5,810
Chinese exports ... ..	3,948	3,480	4,558	4,445	4,500
Straits to Europe and America ... ..	57,143	53,520	60,491	58,541	54,625
Straits to India and China ... ..	1,292	2,178	2,187	2,030	2,100
Australia to Europe and America ... ..	6,482	6,612	5,748	5,384	4,563
Banka sales in Holland ... ..	9,286	11,264	11,530	11,973	12,000
Billiton sales in Java and Holland ... ..	1,968	2,229	2,235	2,241	2,250
Bolivian arrivals in Europe ... ..	16,394	15,594	17,032	18,121	18,225
Total (long tons) ... ..	101,035	99,284	108,833	107,933	104,073

The main users of tin are the manufacturers of tin-plates, while it is also required in conjunction with other metals to produce bronze, brass, Britannia metal, pewter, printers' type, and solder. It is stated that the rising tendency of prices during recent years is due to the fact that production has not been commensurate with the demands for consumption, and also in some measure to the fact that for industrial purposes the metal can be replaced by others to a limited extent only.

4. **Prices of Tin.**—The average price of the metal in the London market for the year 1897 and from 1901 to 1910 was as follows:—

## PRICE PER TON OF TIN, 1897 to 1910.

Year.	Price per Ton.	Year.	Price per Ton.
	£ s. d.		£ s. d.
1897 ... ..	61 8 0	1906 ... ..	180 12 11
1901 ... ..	118 12 8	1907 ... ..	172 12 9
1902 ... ..	120 14 5	1908 ... ..	133 2 6
1903 ... ..	127 6 5	1909 ... ..	134 15 6
1904 ... ..	126 14 8	1910 ... ..	156 12 8
1905 ... ..	143 1 8		

According to "The Mineral Industry" the maximum price obtained for tin during the period 1897-1910 was reached in December, 1906, when the metal was quoted at £195 19s. 9d. per ton.

Recent advices shew that the price of tin has been steadily rising for some time, and it is expected that good values will be maintained sufficiently long to enable a number of new mines in Australia to be properly opened up.

5. **Employment in Tin Mining.**—The number of persons employed in tin mining during each of the years 1901 to 1910 is shewn below:—

## PERSONS ENGAGED IN TIN MINING, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth
	No.	No.	No.	No.	No.	No.	No.
1901 ... ..	1,428	...	1,148	...	413	1,065	4,054
1902 ... ..	1,288	...	1,467	...	249	1,260	4,264
1903 ... ..	2,502	...	1,598	...	294	1,331	5,725
1904 ... ..	2,745	50	2,237	...	284	1,304	6,620
1905 ... ..	2,884	50	2,936	...	479	1,351	7,700
1906 ... ..	3,795	95	2,872	...	890	1,659	9,311
1907 ... ..	3,173	87	2,582	554	1,003	1,828	9,227
1908 ... ..	2,456	53	2,140	384	614	1,588	7,235
1909 ... ..	2,037	48	2,158	355	406	1,576	6,580
1910 ... ..	2,028	25	1,932	322	326	1,598	6,231

\* In the Northern Territory.

## § 7. Zinc.

1. **Production of Zinc.**—The production of spelter is practically confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores.

Gratifying results have been achieved in the work of the profitable extraction of the zinc contents of the large heaps of accumulated tailings and from the ore raised on the Broken Hill field. The year 1909 witnessed the passing of this problem out of the experimental stage, and the practical solution of the difficulty which has confronted the mining companies for many years. At present not only is the zinc being obtained in a marketable form, but the silver and lead contents are being turned to profitable account. In 1899 the exports of zinc amounted to 49,879 tons; in 1909 they totalled 373,906 tons, valued at £1,041,280; and in 1910, 468,627 tons, valued at £1,289,634, the great bulk of the production being obtained from tailings. The following table shews the production of zinc in New South Wales from 1889 to 1910:—

## NEW SOUTH WALES.—PRODUCTION OF ZINC, 1889 to 1910.

Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.	Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.
	Tons.	£		Tons.	£
1889	97	988	1908	276,720	600,883
1891	219	2,622	1909	373,906	1,041,280
1899	49,879	49,207	1910	468,627	1,289,634
1907	237,219	536,620			

The total quantity of zinc (spelter and concentrates) produced in New South Wales to the end of the year 1910 was 1,782,822 tons, valued at £4,358,691. The average price of spelter per ton in the London market during each of the last five years was £27 1s. 5d. in 1906, £23 16s. 9d. in 1907, £20 3s. 5½d. in 1908, £22 3s. 8d. in 1909, and £23 1s. in 1910.

During the year 1910, 12 tons of zinc, valued at £147, were raised in Western Australia.

## § 8. Iron.

1. **General.**—The fact that iron-ore is widely distributed throughout the Commonwealth has long been known, and extensive deposits have been discovered from time to time at various places in New South Wales, Queensland, South Australia, Western Australia, and Tasmania. It will appear, however, from what is stated below, that until quite recently, little has been done in the way of converting these deposits into a marketable commodity.

(i.) *The Manufactures Encouragement Act 1908.* It was hoped that the passing by the Commonwealth Parliament of the Manufactures Encouragement Act, which came into force on the 1st January, 1909, would assist in firmly establishing the iron industry in Australia on a remunerative basis, both in the smelting of pig iron and in the production of bar iron and steel from Australian ore. The Act referred to provides for the payment of a bounty up to the 30th June, 1914, of a total of £150,000 (not exceeding £30,000 per annum) on all pig iron, puddled bar iron and steel, made from Australian ore and pig iron respectively, and for the payment of bounties up to the 30th June, 1912, to a total of £30,000, on galvanised sheet or plate iron or steel, on wire and wire netting, and on iron or steel tubes or pipes, on the following basis :—

## BOUNTIES PAYABLE ON AUSTRALIAN PIG IRON, BAR IRON, STEEL, etc.

Description of Goods.	Rate of Bounty.	Total Amount which may be authorised.	Date of Expiry of Bounty.
CLASS 1.			
Pig iron made from Australian ore ...	12s. per ton	£150,000	30th June, 1914
Puddled bar iron made from Australian pig iron ...	„		
Steel made from Australian pig iron ...	„		
CLASS 2.			
Galvanised sheet or plate iron or steel (whether corrugated or not) made from Australian ore	10 per cent. on value	£30,000	30th June, 1912
Wire netting, not being prison made and being made from Australian ore or from wire manufactured in the United Kingdom	10 per cent. on value		
Wire made from Australian ore			
Iron and steel tubes or pipes (except riveted or cast), not more than six inches internal diameter, made from Australian pig iron or steel	10 per cent. on value		

Particulars of the bounties paid under the above Act during the half-year ended the 30th June, 1909, and during the financial years 1909-10 and 1910-11 are shewn in the following statement:—

**PARTICULARS OF BOUNTIES PAID ON AUSTRALIAN PIG IRON, BAR IRON,  
STEEL, etc., 1909 to 1911.**

Description of Goods.	Steel made from Australian Pig Iron.	Puddled Bar Iron made from Australian Pig Iron.	Pig Iron made from Australian Ore.	Galvanised Sheet Iron made from Ore.	Wire netting made from wire manufactured in the United Kingdom	Total.
	£	£	£	£	£	£
Half-year ended 30th June, 1909	575	568	2,314	191	...	3,648
1909-10 ... ..	1,491	1,254	23,511	286	6,036	32,578
1910-11 ... ..	1,939	2,080	20,462	122	4,824	29,427
Total ... ..	4,005	3,902	46,287	599	10,860	65,653

So far New South Wales is the only State where bounty has been claimed, and the above figures, taken in conjunction with those in the succeeding table, show that production has not been as rapid as might have been expected. The Government of that State proposes to obtain the services of a well-known Scottish expert to inquire into the quality of the ore deposits, conditions of manufacture, &c.

**2. Production of Iron.**—(i.) *New South Wales.* Reference to the extent of the deposits of iron ore in the State, and the events leading up to the establishment of ironworks at Lithgow will be found in preceding issues of the Year Book: During 1910 the following materials were received at the blast furnace:—Iron ore, 72,825 tons; limestone, 31,890 tons; and coke, 54,619 tons. The output was 40,787 tons of pig iron, valued at £161,948, while 7815 tons of steel ingots were also manufactured. The following table shews the quantity and value of finished iron, pig iron, etc., made in New South Wales during the last seven years, chiefly from scrap iron, but partly from the smelting of iron ore:—

**NEW SOUTH WALES—PRODUCTION OF IRON, 1904 to 1910.**

Particulars.	1904.	1905.	1906.	1907.*	1908.†	1909.‡	1910.§
Quantity Tons	6,303	4,447	8,000	29,902	40,207	29,762	40,487
Value ... £	80,504	85,693	112,848	178,632	118,224	106,357	161,948

\* Includes 18,631 tons pig iron, valued at £60,550, produced from 34,500 tons of iron ore raised within the State. † Includes 30,393 tons pig iron, valued at £98,777, from 51,206 tons of ore raised within the State. ‡ Includes 26,762 tons pig iron, valued at £100,357, from 46,740 tons of iron ore raised within the State. § From ore raised within the State.

The bounty paid in 1909 and 1910 on iron and steel made from ores mined in New South Wales was as follows:—



# BOUNTY PAID ON IRON AND STEEL, NEW SOUTH WALES, 1909 and 1910.

Description.	1909.		1910.	
	Tonnage.	Bounty.	Tonnage.	Bounty.
		£		£
Pig iron ... ..	23,179.50	13,908	40,326.5	24,196
Puddled bar iron ... ..	1,938.50	1,163	3,383.5	2,036
Steel ... ..	1,855.25	1,113	3,410.0	2,046
Total ... ..	26,973.25	16,184	47,120.0	28,278

A quantity of iron oxide is purchased by the various gasworks for use in purifying gas, the output in New South Wales being drawn from the deposits at Port Macquarie and Mittagong. During 1910 the quantity raised was 1351 tons, valued at £714, while the total output to the end of that year was 18,353 tons, valued at £23,607. The quantity of ironstone disposed of for flux in New South Wales during 1910 exhibits a decrease, since the requirements of the smelting companies were diminished, owing to suitable ores being obtained. In 1910 the quantity raised was 1648 tons, valued at £1321, as against 4339 tons, valued at £3471, in the preceding year.

(ii.) *Victoria.* Iron ore has been located at various places in Victoria, particularly at Nova Nova, in the Gippsland district, and at Dookie. A blast furnace was erected in 1881 near Lal Lal, on the Moorabool River, and some very fair quality iron was produced, which was used for truck wheels and stamper shoes in the Ballarat mines. The fall in the price of the metal, however, led to the closing of the works. In his report for 1905 the Secretary for Mines states that without special assistance to the industry there does not seem to be any prospect of the deposits being cheaply worked.

(iii.) *Queensland.* Queensland possesses some extensive deposits of iron ore, which is mined chiefly for fluxing purposes in connection with the reduction of gold and copper ores. During the year 1910, 37,138 tons of ironstone, valued at £35,429, were raised, 33,734 tons of which, valued at £32,876, were procured in the Rockhampton district.

(iv.) *South Australia.* In South Australia iron ore is raised for fluxing purposes only, although the State possesses some rich deposits capable of being mined for an indefinite period. The best known deposit is the Iron Knob, a veritable hill of iron of high percentage, situated about forty miles W.S.W. from Port Augusta. The estimated quantity of iron ore in sight at the Iron Knob and Iron Monarch has been set down at 21,000,000 tons.

(v.) *Western Australia.* This State has some very rich deposits of iron ore, but owing to their geographical position, the most extensive fields at the present time are practically unexploited, the production in the State being confined chiefly to that needed for fluxing purposes. The Murchison field possesses some extensive deposits of high-grade ore. There are also deposits on Koolan Island at Yampi Sound.

(vi.) *Tasmania.* The existence of large quantities of iron ore in Tasmania was noted as far back as 1822, when Surveyor-General Evans alluded to the "surprising abundance of iron within a few miles of Launceston." A company known as the Tasmanian Charcoal Iron Company was formed to work these deposits, and commenced operations in June, 1876. Unfortunately, however, the presence of chromium rendered the pig iron so hard and brittle that the works had to be abandoned. Extensive deposits of specular iron ore are also found in the neighbourhood of the Blythe and Gawler Rivers. The total production of iron ore in 1908 was 3600 tons, valued at £1600, and was all raised by the Tasmanian iron mine at Penguin, but owing to the closing down of that mine in 1909, there has been no further production.

(vii.) *World's Production of Iron, 1910.* The quantity of iron produced in Australia is but a very small proportion of the world's production, which in 1910 amounted to 65,860,000 metric tons (pig iron). The leading position for magnitude of production is held by the United States, which in 1910 produced 27,637,000 tons, compared with Germany's 14,793,000 tons, and the United Kingdom 10,380,000 tons. The position of the three countries named is similar to what it has been for several years past.

## § 9. Other Metals.

1. **Aluminium.**—The ores from which aluminium is chiefly made in other countries are widely distributed in great abundance in New South Wales in the form of hydrous silicate of alumina, which occurs in all clays. In the form of bauxite or hydrous sesquioxide, it is found at Emmaville, Inverell, and Wingello, its existence being first recognised in the last named locality in 1889. The metal, however, has not been manufactured locally.

2. **Antimony.**—This metal is widely distributed in New South Wales, and has been found native at Lucknow, near Orange. Dyscrasite, a silver antimonide, has been found in masses up to one ton in weight in the Broken Hill lodes. It has also been found at various places in Victoria, chiefly in association with gold. In 1910 the export of antimony metal and ore from New South Wales amounted to £1450. The total quantity of antimony ore raised in New South Wales up to the end of 1910 was 16,426 tons, valued at £302,859. Comparatively little attention was given to mining for antimony in New South Wales during 1910 owing to the low price ruling. The metal occurs in large quantities in the Hillgrove division, and can readily be mined extensively should the price warrant operations. The production of antimony ore in Victoria during 1910 amounted to 1262 tons, valued at £6255. The ore was raised by a syndicate operating at Costerfield. In Queensland extensive deposits were discovered at Neerdie, in the Wide Bay district, during 1872, also at Wolfram Camp on the Hodgkinson field, on the Palmer River, in the Ravenswood district, and on the Mitchell River in the Herberton district. The low price of antimony throughout the year 1910 rendered profitable working impossible. In Western Australia good lodes of stibnite carrying gold have been found in the Roeburne district.

3. **Arsenic.**—In the form of arsenopyrite, arsenic is of wide distribution in Victoria, but the deposits are worked to a limited extent only. At Ballarat a small quantity of the oxide is obtained from the flues of roasting furnaces. In New South Wales about 200 tons of arsenic were obtained in 1910 by the Conrad Mines Ltd. at Howell.

4. **Barium.**—A valuable lode of barium sulphate has been discovered near Dalwin, on the North Lyell railway, in Tasmania, and the necessary plant is in course of erection to develop the deposit. It is stated that the lode is from  $2\frac{1}{2}$  to 7 feet wide over a length of over 40 chains.

5. **Bismuth.**—This metal has been found in New South Wales, near Glen Innes, and also in the vicinity of Pambula, its discovery dating from 1877. A large body of bismuth-bearing ore has been located near Oberon, and was being prospected during 1910, while several trial parcels were obtained for treatment from a mine at Kirkdale, in the Yass division. About  $6\frac{1}{2}$  tons of metal and ore, valued at £2004, were exported from New South Wales during 1910; the total quantity exported to the end of that year was 528 tons, valued at £125,527. In Queensland wolfram, molybdenite, and bismuth have been found in various parts of the Herberton and Chillagoe districts, but the chief centres of production are at Wolfram Camp, where they have been found in association, and at Mount Carbine, where chiefly wolfram is mined. Highly payable

deposits of the minerals have been found in shallow ground near Bampton. During 1910 an important new find of bismuth was made at the Glen, near Irvinebank. From the Kangaroo Hills field ore to the value of £2100 was produced in 1910, while the yield of bismuth from the Biggenden Bismuth and Gold Mine was valued at £7100. The total production in 1910, including wolfram, was valued at £14,572. In South Australia deposits are found at Balhannah, at Mount Macdonald, and at Winnininnie, on the shores of Spencer's Gulf. In Tasmania 10 tons, valued at £4249, were raised in 1910 at Middlesex.

6. **Chromium.**—In New South Wales chromium is found at Bowling Alley Point, on the Peel River, and also near Colac, but there was no production in 1910. The total exports to the end of 1910 amounted to 30,663 tons, valued at £101,108. Chrome iron ore is found in Queensland in the Rockhampton district, where the Elgalla mine, at Cawarral, produced 773 tons, valued at £581. A small quantity was also produced near Broadmount.

7. **Carnotite.**—A discovery of carnotite ore was made in 1906 twenty miles E.S.E. from the Olary railway station in South Australia, and steps are being taken to test its value commercially. With this object in view, 30 tons of ore have been sent to Europe for assay.

8. **Cobalt.**—This metal was found at Carcoar in New South Wales in 1888, and subsequently at Bungonia, Port Macquarie, and various other places. During 1910, 9 tons of cobalt ore, valued at £55, were exported, while the total quantity exported from New South Wales up to the end of 1910 was 884 tons, valued at £8065. Deposits have been noted in South Australia near Bimbourie, and South Blinman; in Western Australia at Norseman and Kanowna; and at various places in Victoria.

9. **Lead.**—This metal was first noted in New South Wales in 1849, when small specimens of native metal were found by the Rev. W. B. Clarke. At present lead mining *per se* is not practised to any extent in the Commonwealth, the supply of the metal being chiefly obtained in conjunction with silver. In New South Wales, in addition to the lead contained in silver-lead, ore, and concentrates, 21,195 tons of pig lead (including lead-carbonate and lead-chloride produced from the leaching plants at Broken Hill), valued at £248,561, were produced in 1910, as against 15,476 tons, valued at £186,073, in 1909. In Victoria oxides, sulphides, and carbonates of lead are found in the reefs of most of the goldfields. The deposits are not, however, of sufficient extent to repay the cost of working. In Queensland the deposits are worked chiefly for the silver contents of the ore, the lead produced amounting to 2392 tons, valued at £30,401, of which 986 tons, valued at £12,508, were produced from the mines in the Chillagoe district, while the Etheridge, Herberton, and Charters Towers districts each produced over £5000 worth. At one time South Australia produced a fair amount of lead, £22,303 being raised in 1902, but the production has rapidly decreased, and in 1910, only 20 tons, valued at £260, were obtained.

10. **Mercury.**—In New South Wales mercury was first recorded by the Rev. W. B. Clarke in 1843. Cinnabar has been found in lodes and impregnations at various places, such as Bingara, Clarence River, etc. In the Copmanhurst division a lode yielding encouraging assays is being prospected by the Pulganbar Company. Up to the present the production of quicksilver has been small, the total being only a little over 1000 lbs. Lodes of cinnabar have been found in Queensland at Kilkivan, and at Black Snake, in the Wide Bay district; about four tons were produced between 1824 and 1891. Between O.K. and Mungana several shows have been prospected with encouraging results. Small quantities have been found disseminated over a large area near Willunga in South Australia.

**11. Manganese.**—Ores of this metal occur in considerable quantity in widely separated districts in New South Wales, but the low price of the metal precludes mining to any great extent, and the production to date has been trifling. In Queensland there are extensive deposits at Mount Miller, at Gladstone, and Mount Nansen, near Gympie, the product being utilised chiefly by the Mount Morgan mine. The production from the Mount Miller mine amounted in 1910 to 786 tons of ore, valued at £3106. Small quantities of manganese ore were raised in Victoria during 1910, from mines in the vicinity of Heathcote and Buchan. Extensive deposits of the ore were mined at Boolcunda in South Australia some years ago, but latterly the production has ceased. Deposits have also been noted at Kangaroo Island, Quorn, Tumby, and various other parts of the State. In Western Australia ores of the metal are found widely scattered, the black oxide being especially plentiful in the Kimberley district.

**12. Molybdenum.**—In New South Wales molybdenite (associated with bismuth) is obtained at Kingsgate, near Glen Innes, the export in 1910 being 47 tons, valued at £5667, as compared with 28 tons, valued at £3249, in the previous year. The production in Queensland for 1910 was 106 tons, valued at £12,050, the bulk of which was contributed by the mines in the Chillagoe field.

**13. Radium.**—It is reported that there have been several definite discoveries in Australia of the occurrence of minerals containing radium. The discovery at Olary, in South Australia, of carnotite, which is an alteration product of pitchblende, the compound from which radium is obtained, has already been referred to. In 1910 pitchblende was identified in portion of the workings at Olary, and a specimen, exhibiting a high degree of radio-activity, was obtained. This is the first authentic discovery of the mineral pitchblende in Australia. The deposits of radio-active uranium ores found near Mount Painter are now being mined, and it is hoped that they will prove of economic value as a source of radium. In another case a monazite from Pilbara, Western Australia, has been shewn to give off radium emanations. This mineral has been called "pilbarite." Yet another specimen of mineral having the composition of a secondary pitchblende has been discovered by a prospector. The exact place where this specimen was found is uncertain, but it is believed that it came from the New England district of New South Wales. It is stated that its radio-activity is very marked, the mineral being 1 per cent. more active than the Bohemian variety, and that it contains only such elements as were readily separable from one another by the methods used to obtain pure uranium and radium from Bohemian pitchblende. • Lastly, it is stated that the ores obtained at the Moonta mines, South Australia, contain from one-tenth to one-fifteenth of the amount of radium found in high-grade pitchblende, and that a product having a fairly high degree of radio-activity can be extracted therefrom with comparative ease.

**14. Tungsten.**—Wolfram and scheelite, the principal ores of tungsten, are both mined to a small extent in New South Wales. During 1910 the export of wolfram was 166 tons, valued at £16,258, and of scheelite 151 tons, valued at £15,747. Wolfram was mined chiefly in the Deepwater division, and scheelite at Hillgrove. A mine near Omeo, in Victoria, was developed during 1909, and 18½ tons of concentrates, valued at £1954, were produced during 1910. The Mount Bismarck Wolfram Mining Company, from their mine near Marysville, won 7½ tons of ore, valued at £69. In Queensland, tungsten ores are found in several districts, the chief centres of wolfram production in 1910 being Chillagoe £51,400, and Herberton £29,977. The total production of wolfram in 1910 was valued at £88,116. Small quantities of scheelite were also raised in the districts mentioned. A deposit of wolfram was discovered near Yankalilla in South Australia as far back as 1893, but the production up to date has been small.

In Western Australia a deposit of wolfram has recently been discovered in the West Kimberley district, about 70 miles to the north-east of Derby; two tons, valued at £190, were raised during 1910. Wolfram is mined in Tasmania at Ben Lomond and in the Middlesex district, the production for 1910 being 67 tons, valued at £7280. A rich lode of scheelite has been discovered on King Island in Bass Strait.

15. **Tantalum.**—Tantalite in small quantities has been found in the Greenbushes mineral field of Western Australia for some time past, but recently a lode of fairly extensive proportions was located at the Wodgina tinfield. Up to the end of 1905 the production of this mineral in Western Australia amounted to 73 tons, valued at about £10,000, but early in 1906 it was found that the supply exceeded the demand and production was temporarily stopped; in 1908 a small quantity valued at £400 was exported. About £327 worth was reported as having been raised in the Greenbushes and Pilbara fields during 1909, but none was exported owing to the entire absence of any market. Small quantities of the mineral are also produced in the Northern Territory.

16. **Uranium.**—This mineral has been discovered in South Australia in the country between Mount Painter and Mount Pitts, about 80 miles east from Farina. The uranium ores occur most frequently in the form of torbernite and autunite, and are found over a considerable area. The discovery is therefore of considerable importance, since ores of this mineral are found to a very limited extent in other parts of the world, and uranium is the chief source from which radium is derived.

In addition to the metals enumerated above there is a large number of others occurring in greater or less degree, while fresh discoveries are being constantly reported.

## (B). NON-METALLIC MINERALS.

### § 10. Coal.

1. **Production in each State.**—(i). *Historical.* A historical account of the discovery of coal in each State will be found in preceding issues of the Year Book.

(ii). *New South Wales.*—In the early portion of the year 1910 the coal trade was in a very unsettled state owing to the continuance of labour troubles. The southern collieries did not resume operations till the middle of February, while those in the northern district were idle till March. Under these circumstances, therefore, the total coal production for the year, which amounted to 8,173,508 tons, valued at £3,009,657, may be considered as fairly satisfactory.

(iii). *Victoria.*—During 1910, 369,709 tons of coal were raised, an increase of 241,036 tons on the previous year. A State coal mine was established at Powlett River towards the end of 1909, and its contribution to the total production in 1910 was 201,053 tons. A railway, 27 miles in length, has been constructed from Nyora to the coal-field. There are six shafts at the mine from 30 to 170 feet deep and coal is being raised from five of them. Over 1100 men are employed at the mine and surface works. The township—under the name of Wonthaggi—has been laid out on modern lines, and elaborate arrangements have been made for its lighting and water supply, while State brickworks and quarries have been established. The population of Wonthaggi was given in 1910 as 8000, and the valuation of the borough as £330,000. Other payable seams in this district outcrop about five miles away, near Cape Patterson, and it is believed that the coal-bearing area has an extent of from twelve to fifteen square miles.

(iv.) *Queensland.* The number of collieries contributing to the output in 1910 was 37, and the quantity of coal raised was 871,166 tons, valued at £322,822, as against 756,577 tons, valued at £270,726, for the preceding year. The industry is at present in a very satisfactory position in the northern State, and owing to the wide area over which the deposits stretch, practically no limit can be set to its possibilities of extension.

(v.) *Western Australia.* Six collieries were in operation on the Collie field during 1910, and the output for the year, viz., 262,166 tons, was the highest ever recorded in the State.

(vi.) *Tasmania.* The principal collieries in Tasmania are the Cornwall and Mount Nicholas, the former producing 33,000 and the latter 37,000 tons out of a total yield in 1910 of 82,455 tons.

The quantity and value of coal produced in each State and in the Commonwealth at various periods since 1881, are shewn in the following table:—

### PRODUCTION OF COAL, AUSTRALIA, 1881 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1881	1,769,597	...	65,612	...	...	11,163	1,846,372
1891	4,037,929	22,834	271,603	...	...	43,256	4,375,622
1901	5,968,426	209,329	539,472	...	117,836	45,438	6,890,501
1902	5,942,011	225,164	501,531	...	140,884	48,863	6,858,453
1903	6,354,846	69,861	507,801	...	133,427	49,069	7,115,004
1904	6,019,809	121,742	512,015	...	138,550	61,109	6,853,225
1905	6,632,138	155,136	529,326	...	127,364	51,993	7,485,957
1906	7,626,362	160,631	606,772	...	149,755	52,896	8,596,416
1907	8,657,924	138,635	683,372	...	142,373	58,891	9,681,095
1908	9,147,025	113,962	696,332	...	175,248	61,008	10,193,635
1909	7,019,879	128,873	756,577	...	214,302	66,162	8,185,593
1910	8,173,508	369,709	871,166	...	262,166	82,455	9,759,004
VALUE.							
	£	£	£	£	£	£	£
1881	603,248	...	29,033	...	...	4,465	636,746
1891	1,742,796	19,731	128,198	...	...	17,303	1,908,028
1901	2,178,929	147,228	189,877	...	68,561	18,175	2,602,770
1902	2,206,598	155,850	172,286	...	86,188	19,546	2,440,468
1903	2,319,660	43,645	161,798	...	69,128	19,628	2,616,859
1904	1,994,952	70,208	166,536	...	67,174	24,444	2,323,314
1905	2,003,461	79,060	155,477	...	55,312	20,797	2,314,107
1906	2,337,227	80,283	173,282	...	57,998	21,158	2,669,948
1907	2,922,419	79,706	222,135	...	55,158	23,558	3,302,974
1908	3,353,093	64,778	244,922	...	75,694	24,427	3,762,914
1909	2,618,596	76,945	270,726	...	90,965	26,464	3,083,696
1910	3,009,657	189,254	322,822	...	113,699	48,609	3,684,041

In New South Wales the decrease in the output for 1909, as compared with the previous year, was due to labour troubles, and as pointed out previously, the disturbed industrial conditions prejudicially affected the yield in the early months of 1910.

In Queensland the bulk of the increase in 1910 is accounted for by the larger output in the Ipswich and Darling Downs districts, which produced 729,000 tons of coal in 1910 as compared with 643,000 tons in the preceding year.

2. *Distribution and Quantity of Coal in each State.*—(i.) *New South Wales.* Estimates have from time to time been made as to the total quantity of coal available for working in the deposits in New South Wales, and while these naturally differ to some extent, they agree in placing the amount at well over a thousand million tons, without taking into consideration the deposits existing below a depth of 4000 feet. According to Mr. E. F. Pittman, the coal-bearing rocks of New South Wales may be classified as follows:—

## COAL-BEARING ROCKS OF NEW SOUTH WALES.

Geological Age.	Maximum Thickness of Coal-bearing Strata.	Locality.	Character of Coal.
I. Tertiary—Eocene to Pliocene ...	Approx. 100 ft.	Kiandra, Gulgong, and Chouta Bay	Brown coal or lignite.
II. Mesozoic—Triassic ...	2,500 „	Clarence and Richmond Rivers	Coal suitable for local use only.
III. Palæozoic—Permo-Carboniferous	13,000 „	Northern, Southern and Western Coalfields	Good coal, suitable for gas, household and steaming.
IV. Palæozoic—Carboniferous ...	10,000 „	Stroud	Very inferior.

No serious attempt has been made to use the deposits of brown coal or lignite as a source of fuel. The Triassic deposits in the Clarence and Richmond districts contain numerous seams, but the coal is largely intersected by bands, while its large percentage of ash renders it unfit for use as fuel for industrial purposes. Probably these beds extend under the great western plains, but the presence of artesian water precludes the possibility of their being worked. It is in the Permo-Carboniferous division that the great productive coal seams of the State are found, the area which they cover being estimated at about 25,000 square miles. The coal from the various districts embraced in this division differs considerably in quality—that from the Newcastle district being especially suitable for gas-making and household purposes, while the product of the Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. The Permo-Carboniferous measures have in various places been disturbed by intrusions of volcanic rocks, which in some instances have completely cindered the seams in close proximity to the intrusive masses, while in other instances the coal has been turned into a natural coke, some of which has realised good prices as fuel.

## COAL RAISED IN NEW SOUTH WALES, 1881 to 1910.

District.	1881.		1901.		1905.		1910.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£	Tons.	£
Northern ...	1,352,472	437,270	3,999,252	1,669,519	4,645,742	1,473,995	5,366,975	2,178,952
Southern ...	253,283	115,505	1,544,454	407,196	1,556,678	421,768	1,875,009	576,261
Western ...	163,842	50,473	424,720	102,214	429,718	107,698	931,524	254,443
Total ...	1,769,597	603,248	5,968,426	2,178,929	6,632,138	2,003,461	8,173,508	3,009,656

So far back as 1847 the Rev. W. B. Clarke expressed the belief that workable coal would be found in the strata below Sydney, a belief that was also held by subsequent geologists, who based their contentions on stratigraphical and palæontological evidence. The later geologists urged that the Illawarra coal measures of the South Coast district were identical with the Newcastle measures of the Northern district, although it was agreed that the deposits in the neighbourhood of Sydney would probably be found at a considerable depth. Borings were made in several localities close to Sydney, and in 1891 a drill put down at Cremorne Point in Sydney Harbour passed through a seam of coal seven feet four inches thick at a depth of 2801 feet. Unfortunately the site of the bore happened to be in the vicinity of a volcanic dyke, which had cindered the coal near the locality of its intrusion. A second bore was commenced in July, 1892, and in November, 1893, a seam of excellent coal, ten feet three inches thick, was reached at 2917 feet. The results attained led to the formation of a company which acquired land at Balmain, and expended a considerable sum of money in the purchase of plant suitable

for working coal at such a great depth. Sinking operations were commenced in June, 1897, and coal was struck at a depth of 2880 feet on the 21st November, 1901. Up to the present developmental work has not sufficiently advanced to permit of any considerable production. During the year 1910, the colliery passed into other hands, and as the financial conditions have been improved, it is proposed to push on more rapidly with the work of developing the mine.

(ii.) *Victoria.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district. The coal is of excellent quality for steaming and household purposes. The full exploitation of the Victorian coal deposits has, however, been rather severely hindered by various obstacles. In the Report of the Royal Commission on the Coal Industry, 1906, these have been summarised as follows:—(a) Labour troubles. (b) Difficulties of working arising from faults, displacements, and thin seams. (c) Increased cost of production as the workings extend. (d) The low price ruling for coal.

As pointed out in a preceding page, however, the production in 1910 was considerably in advance of that recorded in any preceding year.

Deposits of brown coal and lignite of immense extent occur in gravels, sands, and clays of the Cainozoic period throughout Gippsland, Mornington Peninsula, Werribee Plains, Gellibrand, and Barwon and Moorabool basins. In the Latrobe Valley the beds reach a thickness of over 800 feet. When dried, the material makes good fuel, but owing to its excessive combustibility and friability requires to be consumed in specially constructed grates. Attempts have been made to manufacture briquettes from the brown coal, but so far without any great measure of success. At the Melbourne and Altona Colliery Company's mine at Altona, twenty-five men were employed winning brown coal at the end of 1910.

The output of coal from the chief Victorian collieries during the last nine years was as follows:—

#### PRODUCTION OF COAL IN VICTORIA, 1902 to 1910.

Year.	State Coal Mine.	Ontrim Howitt Company	Jumbunna Coal Company	Coal Creek Proprietary.	Silkstone Co-operative Company	Austral Coal.	Other Companies.	Total Production.	Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1902	...	114,686	67,876	39,257	2,257	...	1,088	225,164	155,850
1903	...	20,602	18,517	20,727	4,354	...	5,661	69,861	43,645
1904	...	57,328	39,364	22,547	2,014	...	489	121,742	70,208
1905	...	71,989	49,009	27,710	1,624	...	4,804	155,136	79,060
1906	...	74,812	64,222	13,214	3,977	...	4,406	160,631	80,283
1907	...	64,083	61,755	3,762	7,565	...	1,470	138,635	79,706
1908	...	47,633	58,552	...	6,967	...	810	113,962	64,778
1909	2,946	44,156	65,945	3,265	...	10,631	1,230	128,673	76,945
1910	201,053	46,832	61,954	10,968	...	36,052	12,200	369,709	189,254

The separate entries for the various companies refer to production of black coal only, but for 1909, 500 tons of brown coal, valued at £75, which were obtained at Morwell, and for 1910, 50 tons, valued at £12, raised at Morwell, and 600 tons, valued at £265, obtained at Altona, have been included in the total production.

(iii.) *South Australia.* The coal from Leigh's Creek in South Australia is subject to similar disabilities to the Victorian brown coal, and until some means are devised of overcoming these, production will probably languish.

(iv.) *Queensland.* In Queensland the coal-bearing strata are of vast extent and wide distribution, being noted under the greater portion of the South-eastern districts, within 200 miles of the sea, as far north as Cooktown, and under portions of the far western interior. The Ipswich beds are estimated to occupy about 12,000 square miles of country, while the Burrum fields occupy a considerably larger area. At Callide, fifty miles west of Gladstone, a seam of coal free from bands has been struck in a shaft only



sixty feet deep, and borings have proved the deposit to be of considerable magnitude. The beds in the Cook district are estimated to comprise rather more than 1000 square miles, but coal measures extend to the south-west far beyond Laura and to the north of the railway. Extensive beds occur in the basin of the Fitzroy River, in the Broadsound district, and at the Bowen River. Amongst other places where the mineral is found may be enumerated Clermont, the Palmer River, Tambo, Winton, Mount Mulligan, and the Flinders River. A bituminous coal is yielded by the Ipswich seams, those of the Darling Downs yield a cannel, while anthracite of good quality is furnished by the Dawson River beds.

The quantity and value of coal raised in Queensland at various periods since 1861 were as shewn below :—

#### PRODUCTION OF COAL IN QUEENSLAND, 1861 to 1910.

Year ... ..	1861.	1871.	1881.	1891.	1901.	1910.
Quantity ... Tons	14,212	17,000	65,612	271,603	539,472	871,166
Value ... £	9,922	9,407	29,033	128,198	189,877	322,822

At present coal mining in Queensland is in a very satisfactory position, the increasing volume of the trade being chiefly due to the action of the Government in granting concessions to vessels coaling at local ports.

The distribution of production during the last two years was as follows :—

#### QUEENSLAND COLLIERIES, 1909 and 1910.

Collieries	1909.		1910.	
	Tons Raised.	Average Value at Pit's Mouth.	Tons Raised.	Average Value at Pit's Mouth.
Ipswich and Darling Downs ... ..	642,864	s. d. 6 8½	729,012	s. d. 6 11
Wide Bay ... ..	92,573	9 7½	93,055	10 5½
Rockhampton ... ..	15,538.	11 6	14,392	11 9
Clermont ... ..	5,469	4 6	34,707	8 0
Other (Nundah) ... ..	133	...	...	...
Total ... ..	756,577	7 1½	871,166	7 5

The output in 1910 was distributed approximately as follows :—Bunker and cargo coal, 393,000 tons ; Railway and Government Departments, 261,000 tons ; factories, works, etc., 217,000 tons.

(v.) *Western Australia.* The coal seams in Western Australia belong to the Carboniferous, Mesozoic, and Post-tertiary ages. Most of the coal contains a large proportion of moisture, and belongs partly to the hydrous bituminous and partly to the lignite class. The only coalfield at present worked is at Collie, in the Mesozoic beds of the south-west. The coal produced is bright and clean, but very fragile when free from moisture. The record output in 1909 and 1910 is consequent on the establishment of a bunkering trade at Bunbury and Fremantle, which has developed very satisfactorily. The production from this field since 1901 was as follows :—

#### PRODUCTION OF COAL IN WESTERN AUSTRALIA, 1901 to 1910.

Year ... ..	1901.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Quantity Tons	117,836	138,550	127,364	149,755	142,373	175,248	214,302	262,166
Value £	68,561	67,174	55,312	57,998	55,158	75,694	90,965	113,699

(vi.) *Tasmania.* In Tasmania coal occurs in the Carboniferous and Mesozoic systems, the product of the former class being, however, far inferior to that of the latter. Carboniferous seams occur at the Don, Tarleton, Latrobe, Port Cygnet, Tippagory Range, St. Mary's, and Adventure Bay, the seam at Port Cygnet having a thickness of two feet and being of fair quality. The Mesozoic coal measures are well developed in the Fingal basin, the Cornwall coal from this locality being excellent for household purposes. The chief production of recent years has been furnished by the Mt. Nicholas and Cornwall mines, the quantity raised by these mines in 1910 being 33,000 and 37,000 tons respectively. The quantity of coal raised during the years 1901 to 1910 in the various districts was as follows:—

#### PRODUCTION OF COAL IN TASMANIA, 1901 to 1910.

District.	1901.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
North-western ...	2,952	2,282	1,261	1,878	1,045	...	1,543	1,720
Eastern ...	37,239	54,567	46,708	46,803	53,214	55,539	57,227	71,115
Midland ...	1,536	940	200	393	624	...	560	721
South-eastern ...	...	200	200	1,483	4,008	5,529	6,832	8,899
South-western ...	3,711	3,120	3,624	2,339				
Total ...	45,438	61,109	51,993	52,896	58,891	61,068	66,162	82,455

3. *Production of Coal in Various Countries.*—The total known coal production of the world in 1910 amounted to about 1140 million tons (exclusive of brown coal or lignite), towards which the Commonwealth contributed 10 million tons, or less than 1 per cent. The following table shows the production of the British Empire and the chief foreign countries in units of 1000 tons during each year of the period 1901 to 1910:—

#### COAL PRODUCTION, BRITISH EMPIRE, 1901-10.

Year.	United Kingdom.	British India.	Canada.	Australian C'wealth.	New Zealand.	Transvaal.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	219,047	6,636	5,791	6,881	1,228	712
1902 ...	227,095	7,424	6,667	6,858	1,363	1,420
1903 ...	230,334	7,438	7,107	7,115	1,420	2,012
1904 ...	232,428	8,216	7,370	6,853	1,538	2,151
1905 ...	236,129	8,418	7,739	7,496	1,586	2,327
1906 ...	251,058	9,783	8,717	8,596	1,730	2,583
1907 ...	267,831	11,147	9,385	9,681	1,831	2,574
1908 ...	261,529	12,770	9,720	10,194	1,861	2,690
1909 ...	263,774	11,870	9,376	8,186	1,911	3,235
1910 ...	264,433	12,047	11,425	9,759	2,197	3,549

#### COAL PRODUCTION, FOREIGN COUNTRIES, 1901-10.

Year.	Russian Empire.	Sweden.	German Empire.	Belgium.	France.	Spain.	Austria-Hungary.	Japan.	United States.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	16,215	268	106,795	21,856	31,126	2,609	12,895	8,885	261,875
1902 ...	16,156	300	105,747	23,493	28,893	2,679	12,012	9,589	269,277
1903 ...	17,532	315	114,763	23,415	33,668	2,654	12,526	9,979	319,068
1904 ...	19,294	316	118,874	22,395	32,964	2,974	12,813	10,602	314,122
1905 ...	18,368	317	119,350	21,506	34,652	3,152	13,454	11,818	350,821
1906 ...	21,378	292	134,914	23,191	32,920	3,157	14,475	12,845	369,783
1907 ...	25,583	300	140,885	23,324	35,411	3,637	14,881	13,656	428,886
1908 ...	25,487	300	145,298	23,179	36,044	3,823	14,843	14,387	371,288
1909 ...	24,062	243	146,397	23,140	36,519	3,799	14,868	14,806	411,432
1910 ...	22,650	298	150,372	23,532	32,254	3,751	14,834	15,286	447,837

\* Not available.

Including New Zealand the production from Australasia takes second place amongst the possessions of the British Empire, British India coming first in order.

**5. Export of Coal.**—The exports of coal from the Commonwealth are practically confined to New South Wales.

The total quantity of coal of Australian production (exclusive of bunker coal) exported from the Commonwealth to other countries in 1910 was 1,701,875 tons, valued at £908,969, of which amount 1,700,184 tons, valued at £907,961, were exported from New South Wales. The quantity of bunker coal taken by overseas vessels was 1,159,658 tons, of which 901,480 tons were taken from New South Wales.

(i.) *New South Wales.* In the following table will be found the quantity and value of the exports at decennial intervals since 1881 and during the last five years. The figures for New South Wales are given on the authority of the Mines Department of that State, and include both bunker coal and coal exported from New South Wales to other States of the Commonwealth.

#### EXPORTS OF NEW SOUTH WALES COAL, 1881 to 1910.

Year.	1881.	1891.	1901.	1906.	1907.	1908.	1909.	1910.
Quantity ... 1000 tons	1,030	2,514	3,471	4,962	5,744	6,099	4,394	4,690
Value ... £1000	417	1,307	1,682	2,081	2,662	3,021	2,234	2,459

The principal overseas countries to which coal was exported from New South Wales during the year 1910 were as shown hereunder. The quantity and value refer strictly to exports, and exclude bunker coal.

#### DESTINATION OF NEW SOUTH WALES OVERSEA EXPORTS OF COAL, 1910.

Country.	Quantity.	Value.	Country.	Quantity.	Value.
	Tons.	£		Tons.	£
Chile ...	553,302	303,627	Peru ...	41,796	22,989
Philippine Islands...	199,509	105,194	Hawaii...	64,016	33,842
Straits Settlements	140,620	72,553	United States ...	202,474	111,112
Fiji ...	36,267	17,899	India ...	67,763	32,753
New Zealand ...	228,023	117,974	Java ...	92,343	47,856

The quantity of bunker coal taken from New South Wales by overseas vessels was about 901,000 tons, valued at £493,000.

The distribution of the total output from New South Wales collieries during the last six years was as follows; the particulars given of amounts exported include coal shipped as bunker coal:—

#### DISTRIBUTION OF TOTAL OUTPUT OF NEW SOUTH WALES COAL, 1905 to 1910.

Year.	Exports to Australasian Ports.	Exports to other Ports.	Local Consumption.	Total.
	Tons.	Tons.	Tons.	Tons.
1905 ...	2,066,576	1,651,477	2,914,085	6,632,138
1906 ...	2,260,090	2,701,450	2,664,822	7,626,362
1907 ...	2,379,024	3,364,483	2,914,417	8,657,924
1908 ...	2,715,310	3,383,366	3,048,349	9,147,025
1909 ...	2,200,769	2,192,834	2,626,276	7,019,879
1910 ...	2,478,497	2,211,936	3,483,075	8,173,508

The figures quoted above are given on the authority of the New South Wales Mines Department. Owing to the abolition of the record of interstate trade it is impossible to give the quantities forwarded to each of the States of the Commonwealth.

**5. Consumption of Coal in Australia.**—An estimate of the consumption of coal in the Commonwealth may be arrived at by adding the imports to the home production, and deducting the exports (including bunker coal taken by oversea vessels). The following table shows the consumption of coal in Australia, computed in the manner specified, for the last six years:—

**CONSUMPTION OF COAL IN AUSTRALIA, 1905 to 1910.**

Year.	Quantity of Coal Consumed.			
	Home Produce.	Produce of the United Kingdom.	Produce of Other Countries.	Total.
	Tons.	Tons.	Tons.	Tons.
1905 ... ..	5,468,000	...	8,000	5,476,000
1906 ... ..	5,352,000	1,000	15,000	5,368,000
1907 ... ..	5,954,000	3,000	12,000	5,969,000
1908 ... ..	6,037,000	4,000	11,000	6,102,000
1909 ... ..	5,367,000	2,000	7,000	5,376,000
1910 ... ..	6,897,000	110,000	198,000	7,205,000

The figures for 1910 are, of course, abnormal, the comparatively heavy importation from the United Kingdom and foreign countries being due to uncertainty in the local supply on account of the strike of coal-miners in New South Wales. Of the total importation from foreign countries, India supplied 138,000 tons, and Japan 28,000 tons.

**6. Price of Coal.**—(i.) *New South Wales.* The price of coal in New South Wales has been subject to considerable fluctuation since the date of first production. Up to the end of 1857 the average value of the total output was 11s. 10d. per ton. Next year the value had risen to nearly 15s., declining thereafter until in 1871 the price realised was 7s. From 1872 to 1879 there was a rise in value to 12s. Between 1882 and 1891 the price ranged between 8s. and 10s. From 1891 onwards there was a steady decline until 1898, when the average was 5s. 4d. Henceforward prices rose again until 1902, when 7s. 5d. was the average. A decline then set in until 1905, when the price stood at a little over 6s., followed by a rise of one penny in 1906, and a further rise of eightpence in 1907. In 1908 the average was 7s. 4d.; in 1909, 7s. 5½d.; and in 1910, 7s. 4d. per ton. The price of New South Wales coal depends on the district from which it is obtained, the northern (Newcastle) coal always realising a much higher rate than the southern or western product. The average rate in each district during the last six years was as follows:—

**PRICE OF COAL IN NEW SOUTH WALES (PER TON), 1905 to 1910.**

Year.				Northern District.	Southern District.	Western District.
				s. d.	s. d.	s. d.
1905 ... ..	...	...	...	6 4.15	5 5.03	5 0.15
1906 ... ..	...	...	...	6 5.28	5 6.60	4 10.81
1907 ... ..	...	...	...	7 4.41	5 7.44	4 6.90
1908 ... ..	...	...	...	8 0.78	5 10.91	4 5.52
1909 ... ..	...	...	...	8 3.48	5 11.91	4 9.34
1910 ... ..	...	...	...	8 1.44	6 1.76	5 5.56

(ii.) *Victoria.* In Victoria the average price of coal up to the 31st December, 1890, was 19s. 3d. per ton. In 1895 the price was still as high as 12s. 2d., but in the following

five years there was a serious decline, the value in 1900 being quoted at 9s. 7d. per ton. In 1901, however, there was an astonishing rise, the figure being as high as 14s. 7d. Since that year, however, the price again declined, the average for 1905 being 10s. 2d.; for 1906, 10s.; for 1907, 11s. 6d.; for 1908, 11s. 5d.; for 1909, 12s.; and for 1910, 10s. 6d.

(iii.) *Queensland.* The average annual price of coal at the pit's mouth in Queensland during the period 1901 to 1910 ranged from 5s. 8½d. in 1906 to 7s. 5d. in 1910. Prices in the principal coal-producing districts during the last five years were as follows:—

#### PRICE OF COAL, QUEENSLAND, 1906 to 1910.

District.	Value at Pit's Mouth.				
	1906.	1907.	1908.	1909.	1910.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
Ipswich and Darling Downs ...	5 2½	6 1½	6 6½	6 8½	6 11
Wide Bay and Maryborough ...	8 0½	8 4	9 5½	9 7½	10 5½
Rockhampton ...	11 2½	11 6½	11 7½	11 6	11 9
Clermont ...	...	...	...	4 6	8 0

(iv.) *Western Australia.* The average price of the Collie (Western Australia) coal up to the end of 1901 was 9s. 4d. per ton, the price in 1901 being 11s. 7d. In 1902 the average stood at 12s. 3d., and from that time the price fell steadily until 1906, when it was 7s. 7½d. per ton. In 1907, the average price was 7s. 8½d.; in 1908, 8s. 7½d.; in 1909, 8s. 5½d.; and in 1910, 8s. 8d. per ton.

(v.) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania was 8s. in 1901. In 1902 it was 8s. 7d.; in 1903, 8s. 9d.; in 1904 and 1905, 9s. 8d.; in 1906, 9s. 9d.; in 1907, 1908, and 1909, 8s.; and in 1910, 11s. 9d.

7. **Price of Coal in other Countries.**—According to a report published by the Board of Trade the average value of coal at the pit's mouth in the five principal coal-producing countries of the world, for the six years ended 1910, was as follows:—

#### PRICES OF FOREIGN COAL, 1905 to 1910.

Year.	United Kingdom.	Germany.	France.	Belgium.	United States.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1905 ...	6 11½	8 7½	10 6½	10 2½	5 8
1906 ...	7 3½	8 11	11 2½	12 2½	5 9½
1907 ...	9 0	9 8½	12 3	13 8½	5 11½
1908 ...	8 11	10 3½	12 11½	13 1½	5 11½
1909 ...	8 0½	10 2½	12 5½	11 8½	5 7½
1910 ...	8 2½	9 11½	*	11 10½	5 10½

\* Not available.

The price of coal at the pit's mouth in the principal British possessions is averaged by the same authority as follows:—

#### PRICE OF COAL, BRITISH POSSESSIONS, 1905 to 1910.

Year.	British India.	C'wealth of Australia.	New Zealand.	Canada.	Transvaal.	Cape of Good Hope.	Natal.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1905	3 4	6 2	10 7	9 4	7 3	18 8	8 3
1906	3 11	6 3	10 7	9 4	6 5	18 5	8 6
1907	4 8	6 10	10 7	10 8½	6 0	18 5	9 0
1908	5 3	7 4½	10 4½	10 8	5 10½	16 8½	8 10
1909	4 8½	7 6½	10 10½	10 10½	5 8	14 4½	7 1½
1910	4 1	7 6½	11 1½	10 8½	5 6½	13 7½	6 0

8. **Employment and Accidents in Coal Mining.**—The number of persons employed in coal mining in each of the States during the year 1910 is shewn below. The table also shews the number of persons killed and injured, with the proportion per 1000 employed, while further columns are added shewing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations.

Returns published by the Board of Trade, England, give the total known number of persons engaged in mining and quarrying throughout the world as over 6 millions, more than one-half of whom were employed in coal mining, the number in the United Kingdom being 992,000; the United States, 666,000; Germany, 613,000; France, 187,000; Belgium, 143,000; India, 116,000; and Austria, 74,000.

Recent returns shew the rate in the United Kingdom in respect of deaths through accidents in coal mines as 1.43, and for the British Empire 1.48 per 1000 persons employed in coal mines. For France the rate is given as 1.17, for Germany 2.30, and the United States 3.35. For foreign countries generally the rate is stated at 2.48 per 1000.

#### EMPLOYMENT AND ACCIDENTS IN COAL MINING, 1910.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1000 Employed.		Tons of Coal Raised for Each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	17,618	21	109	1.16	6.04	389,215	75,000
Victoria ...	1,532	3	22	1.90	14.36	123,236	16,805
Queensland ...	1,823	3	34	1.65	18.65	290,389	25,633
South Australia ...	...	...	...	...	...	...	...
Western Australia ...	521	2	78	4.00	149.71	131,083	3,361
Tasmania ...	248	...	4	...	16.13	...	20,614
Commonwealth	21,742	29	247	1.33	11.36	336,517	39,672

#### § 11. Coke.

1. **Production of Coke.**—Notwithstanding the large deposits of excellent coal in Australia, there is at the present time a fairly considerable amount of coke imported from abroad, the oversea import during the year 1910 amounting to 16,891 tons, valued at £20,630, the bulk of which came from the United Kingdom, Belgium, and Germany, and was taken chiefly by South Australia, Victoria, and Western Australia. The table hereunder gives the production in New South Wales during the last five years.

#### COKE MADE IN NEW SOUTH WALES, 1906 to 1910.

Year.	1906.	1907.	1908.	1909.	1910.
Quantity ... Tons	186,060	254,609	283,873	204,274	282,337
Value, total ... £	110,607	159,316	199,933	137,194	189,069
Value per ton ...	11s. 11d.	12s. 6d.	14s. 1d.	13s. 5d.	13s. 4d.

The falling-off in the returns for 1909 is, of course, due to the shortage of supplies occasioned by the coal strike.

A small quantity of coke is made in Queensland, but the bulk of that used in ore reduction is imported, mainly from New South Wales. The following table shews the amount manufactured locally, and the amount imported during the last five years; the quantities imported include shipments landed from other States of the Commonwealth.

**QUEENSLAND—COKE MANUFACTURED LOCALLY AND IMPORTED, 1906 to 1910.**

Year.	1906.	1907.	1908.	1909.	1910.
Manufactured locally ... .. tons	8,672	8,280	10,684	8,633	11,188
Imported ... .. „	22,661	34,013	58,804	55,559	*32,054

\* Nine months only.

The development in smelting operations in Queensland is reflected in the increased consumption of coke. It must be understood that the coke referred to above is the production of coke-making establishments only, and does not include the inferior article produced at gasworks.

## § 12. Oil Shale and Mineral Oils.

1. **Production of Shale.**—(i.) *New South Wales.* As pointed out by Mr. E. F. Pittman, the name kerosene shale has been rather inaptly applied to a variety of torbanite, cannel, or boghead mineral found at various geological horizons in New South Wales. The mineral does not, as a rule, split in parallel layers, the fracture being rather of a conchoidal type. Pure samples have been found to contain over 89 per cent. of volatile hydro-carbons and over 5 per cent. of fixed carbons. The discovery of the mineral in New South Wales dates probably from 1827, although the first authentic mention by a scientific observer dates from 1845, when its occurrence in the Hartley Vale district was noted by Count Strzelecki. The mineral has been found at several places in the Upper Coal Measures, and in at least two in the Lower Carboniferous. Production on anything like a large scale commenced in 1868, when about 17,000 tons, valued at £48,000, were raised. The production in 1910 amounted to 68,293 tons, valued at £33,896, as compared with 48,718 tons, valued at £23,617, in 1909. With the exception of 1500 tons obtained in the Greta Measures, the whole of the output for 1910 was won in the Western District, chiefly from the mines of the Commonwealth Oil Corporation at Wolgan, and New Hartley, near Capertee. The retorts at Wolgan were ready for operation at the close of the year, while the British Australian Oil Company is erecting works for the production of oil at Hamilton. Up to the end of 1910 the entire production for the State amounted to 1,490,312 tons, valued at £2,251,081.

(ii.) *Victoria.* Up to the present no extensive deposit of oil shale has been located in Victoria.

(iii.) *Queensland.* Deposits of oil shale are known to exist at various localities in Queensland, and what is believed to be a payable oil-bearing area has been located near Roma. In 1907 a contract was let for sinking a bore at this place to search for artesian water, natural gas, or petroleum, to a depth of 4500 feet. In October, 1908, when the bore had reached a depth of 3702 feet, a flow of gas, estimated at over 1,000,000 cubic feet per day, was struck and became ignited accidentally. The fire was extinguished, and after an extra length of casing had been put down the gas was apparently shut off from below. It was then intended to continue the boring till the stipulated depth of 4500 feet was reached, but up to the present this has not been carried out.

(iv.) *South Australia.* In this State large areas of bituminous shale, of which the boundaries are only approximately known, occur at Leigh's Creek and Lake Phillipson. Reference to the mineral known as coorongite is made in sub-section 13.

(v.) *Western Australia.* A deposit of carbonaceous shale of considerable thickness is known to exist at Coolgardie, but the mineral has not yet been raised in any quantity.

(vi.) *Tasmania.* The extensive deposits of oil shale (tasmanite) in the Mersey district were not worked prior to 1910. The known shale area extends over a strip of country about six miles long and two miles wide, but it is probable that the area in which the shale beds occur is more extensive than is at present known. Two companies recently commenced operations in the vicinity of the Mersey, and about 14,000 acres of Crown land were applied for by investors and speculators. The production of shale in 1910 amounted to 364 tons, valued at £214. Kerosene shale of fine quality is found in the country between the Jessie and Flowerdale Rivers, but the extent of the beds has not been proved. The seams are in a series of sandstones and clays, approximately 250 feet thick; one of these seams is 20 inches in thickness.

2. **Export of Shale.**—In 1910 New South Wales exported 9085 tons of shale valued at £16,785, of which 2308 tons were sent to the United Kingdom, 6193 tons to the Netherlands, and 312 tons to India.

3. **Shale Oils Bounties.**—The Shale Oils Bounties Act 1910 provides for the payment of bounties on certain goods manufactured in Australia from Australian shale on or after the 1st July, 1910, and before the 1st July, 1913. The total amount to be made available for bounties under this Act is £50,000. Particulars are given in the following tabular statement:—

**COMMONWEALTH SHALE OILS BOUNTIES—AMOUNT PAYABLE.**

Description of Goods.	Rate of Bounty.	Maximum Amounts which may be paid during the Financial Year 1910-11.	Maximum Amounts which may be paid during each of the Financial Years 1911-12 and 1912-13.	Date of Expiry of Bounty.
Kerosene* ...	2d. per gallon.	£ 8,000	£ 16,000	30th June, 1913.
Refined paraffin wax ...	2s. 6d. per cwt.	2,000	4,000	

\* The product of shale, having a flashing point of not lower than 73 degrees Fahrenheit, determined by the "Abel Pensky" test apparatus in manner prescribed.

During the year ended 30th June, 1911, the Commonwealth Oil Corporation Limited, operating at Hartley Vale, New South Wales, received bounty on kerosene to the amount of £920, and on refined paraffin wax to the amount of £553.

### § 13. Other Non-Metallic Minerals.

1. **Alunite.**—Probably the most remarkable deposit of alunite in the world occurs at Bulladelah, in the county of Gloucester, New South Wales, a large proportion of a low range of mountains in the district being composed of this mineral. The deposits are worked by quarrying, and up to the end of 1910, 34,604 tons had been exported, valued at £102,048, the exports for the year 1910 being 1136 tons, valued at £2840. Supplies of accessible mineral having been largely depleted, the company which owns the quarries is now endeavouring to locate further deposits of a sufficiently high grade to pay for working.

It is reported that large deposits of a high-class alunite have been discovered near Sunbury, Victoria.



2. **Asbestos.**—This substance has been found in various parts of Australia, but up to the present has not been produced in any considerable quantity. In New South Wales the deposits at Jones' Creek, in the Gundagai division, were opened up during the year 1909 and a trial parcel of 15 tons shipped to Germany. It is stated that if reports are satisfactory a plant will be erected and mining operations actively carried on. In Western Australia what may prove to be a valuable deposit of the fibrous chrysotile variety has been located at Tambourah, on the West Pilbara goldfield, and in 1909 £154 worth of this mineral was raised. In 1899 Tasmania raised 200 tons, valued at £363, but there has been no production during the last ten years. Deposits of asbestos of the mountain leather and mountain cork varieties have recently been discovered at Oodlawirra in South Australia.

3. **Barytes.**—In New South Wales during 1910 about 343 tons of barytes, valued at £618, were obtained at Bethungra, in the Cootamundra division, while 100 tons were raised at Cobargo.

4. **Clays and Pigments.**—Valuable deposits of clays and pigments of various sorts are found throughout the Commonwealth. There is a considerable local production of earthenware, bricks, and tiles, but the finer clays have not as yet been extensively used. It is stated that kaolin of a high class has been discovered at Dunbible, near Murwillumbah, in New South Wales; during 1909 these deposits were being opened up, and parcels aggregating 30 tons realised £37 10s., but there was no production in 1910. From Tichborne, in the Parkes division, kaolin is despatched to Sydney for manufacturing purposes, while at Ulladulla about 100 tons of pottery clay were mined. Deposits of steatite near Wallendbeen were worked during 1910, the quantity disposed of during the year amounting to 98 tons. In Victoria 288 tons of kaolin, valued at £202, were raised during 1910, of which 198 tons were raised at Egerton, and the balance at Knowsley and Gordons. In Queensland 4186 tons of fireclay, valued at £1675, were mined during the year 1910. On Kangaroo Island, South Australia, where, it is stated, the first pottery mill in the Commonwealth was erected, there are vast deposits of felspar, china stone, silica, and firebrick clay. There are also very extensive deposits of fireclay near Ardrossan on the Yorke Peninsula, and it is stated that a syndicate has recently been formed to work these deposits. Deposits of ochre have been opened up at Dubbo and Wellington in New South Wales, and ochres and pigments of excellent quality have been produced therefrom. Extensive deposits of iron oxide, giving a return of 80 per cent. ochre, have recently been discovered near Oodlawirra in South Australia.

5. **Coorongite.**—This peculiar indiarubber-like material was first noted many years ago near Salt Creek and in the vicinity of Coorong Inlet, in South Australia. It was thought that the substance owed its origin to subterranean oil-bearing strata, but so far the search for petroleum has not been attended with success.

6. **Fuller's Earth.**—A deposit of this mineral has been located at Boggabri, in New South Wales, and trial samples have realised from £4 to £6 10s. a ton in Sydney. The deposit, which is of considerable extent, is situated in close proximity to the railway, and can, therefore, be handled very cheaply.

7. **Graphite.**—Graphite is found in New South Wales near Undercliff Station, in the county of Buller, but the deposit is not sufficiently pure to prove remunerative. In Victoria the mineral occurs in Ordovician slates in several of the goldfields, but is not worked. In Queensland the mineral was raised some years ago by the Graphite Plumbago Company at Mt. Bopple, near Netherby, on the Maryborough-Gympie line. There is an extensive deposit of the mineral at Mt. Bopple, but the quality is rather inferior. In Western Australia a company has recently been formed to work deposits near Bunbury.

8. **Gypsum.**—This mineral is found at various places in the Commonwealth. There is a large quarry at Boort, Victoria, while in South Australia deposits are being worked at Lake Fowler and near Marion Bay, Yorke Peninsula.

9. **Tripolite, or Diatomaceous Earth.**—Although tripolite has been found at Barraba, Cooma, Wyrallah, and in the Warrumbungle Mountains in New South Wales, the deposits have not yet been worked commercially on any considerable scale. From the deposits at Bunyan, in the Cooma division, 57 tons of diatomaceous earth, valued at £242, were produced in 1910. In Victoria there is a remarkably pure deposit at Lillicur, near Talbot, while beds of the mineral are also met with at Clunes and Portland. From the deposit at Talbot, 500 tons, valued at £2000, were obtained in 1910.

10. **Salt.**—Salt is obtained from salt lakes in the western and north-western districts of Victoria, and from salterns in the neighbourhood of Geelong. Large quantities are also obtained from the shallow salt lakes of South Australia, chiefly on Yorke Peninsula. Lake Hart, about sixty square miles in area, situated about 120 miles N.W. from Port Augusta, contains immense supplies of salt of good quality, which at present, however, owing to distance from market, possess no economic value. The salt is simply scraped from the beds of the lakes in summer time and carted to the refinery. It is stated that care must be taken not to leave too thin a crust of salt over the underlying mud, as the resultant "crop" after the winter rains will in that case be smaller than usual. A bore recently put down near Kingscote, on Kangaroo Island, revealed brine which can be profitably used by evaporation. The production of crude salt in South Australia during 1910 was 54,000 tons, valued at £27,000. In Western Australia supplies are obtained from dried-up shallow lakes and consumed locally or exported. The chief centres of production were formerly Rottnest Island, near Fremantle, and Middle Island, near Esperance, but the greater part of that now produced is obtained at Port Gregory.

11. **Natural Manures.**—In Victoria large quantities of "copi," an impure hydrous sulphate of lime, are obtained in the North-western district. South Australia possesses deposits of rock phosphate near Port Clinton and Ardrossan on Yorke Peninsula, at Belvedere near Kapunda, and at Kooringa, and also at many other places which have only been prospected to a small extent. The production in 1910 was valued at £5200. Although it can hardly be considered a mineral product, mention may be made here of the large accumulations of guano on the Abrolhos Islands, off the coast of Western Australia, in the neighbourhood of Geraldton. The deposits vary in thickness from four to twenty-seven inches. During the years 1876-80 over 36,000 tons were raised; no figures are available shewing the production of recent years.

## § 14. Gems and Gemstones.

1. **Diamonds.**—Diamonds were first noted in New South Wales by E. J. Hargraves in 1851, and in October of the same year by Geological Surveyor Stutchbury. The Cudgong field was discovered in 1867, and shortly afterwards the Bingara diamondiferous deposits were located. None of the diamonds so far discovered have proved of any considerable size, the largest weighing about  $6\frac{1}{2}$  carats. Stones of small size are also found at Cope's Creek and other places in the Inverell district. It is difficult to obtain accurate returns in connection with the production of precious stones, but the yield of diamonds in 1910 was estimated at 3606 carats, valued at £2881, while the total production to the end of 1910 is given as 170,960 carats, valued at £114,343. The yield in 1910 was contributed by miners working in the vicinity of Copeton, in the Tingha division. Small quantities of diamonds are found in Victoria in the gravels of streams running through granite country in the Beechworth district; at Kongbool in the Western District; and near Benalla. The stones are generally small, and the production up to date has been trifling. A few small diamonds have been found in the Pilbara district in Western Australia. In South Australia diamonds have been found on the Echunga goldfield, the most notable gem being Glover's diamond, which was sold for £70.

2. **Sapphires.**—These gems were discovered in New South Wales in 1851, near Burrandong. They have also been found in small quantities near Inverell, and at a few other localities in the State. There is no record of production. Specimens of sapphire have been found in Victoria, but the stones of commercial size are generally of little value owing to flaws.

In Queensland sapphires are found in the gravel of creek beds, between Withersfield and Anakie on the Rockhampton-Winton railway line. The gems show excellent fire and lustre, but the colour is darker blue than the Oriental sapphire. Hyacinths are occasionally found in association with the gems. The production of sapphires in Queensland in 1910 was valued at £21,200, and up to the end of 1910 the total was £161,793.

3. **Precious Opal.**—This stone was first discovered in New South Wales at Rocky Bridge Creek on the Abercrombie River, in the year 1877, and later a most important discovery was made at White Cliffs in the Wilcannia district, which, until recently, contributed the bulk of the production. In 1910, however, out of a total production valued at £66,200, the yield from the Lightning Ridge field near Walgett, amounted to £46,200, while the output from the White Cliffs field was returned at £20,000. At the Lightning Ridge field, operations extended over a large area, and some fine gemstone was won at the deeper levels. The colour and brilliance of the stones generally were quite up to the standard. Occasionally, black opals of very fine quality are found on this field, one specimen weighing  $6\frac{1}{2}$  carats being sold in 1910 for £102.

The total value of opal won in New South Wales since the year 1890 is estimated at £1,237,899.

Small quantities of precious opal are also found in the Beechworth district in Victoria. In Queensland, the first recorded discovery of the gem dates from about 1875. The opaliferous district stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1910 was estimated at £3000, and up to the end of that year at £166,500. These figures are, however, merely approximations, as large quantities of opal are disposed of privately to buyers on the fields, no record of which is obtained. At present, the industry is not in a very satisfactory position as the shallower grounds of the older centres have been worked out, and there appears to be little disposition to explore the deeper grounds.

4. **Other Gems.**—Emeralds were found in New South Wales in the year 1890, near the township of Emmaville, the largest specimen found in the district weighing twenty-three carats in the rough. Altogether 2225 carats were sent to London during that year, some of the gems bringing £4 a carat, but the production has since dwindled. The mine at The Glen in the Emmaville division was reopened and worked for a short period during 1908, when about 1000 carats of emeralds, valued at about £1650, were obtained. The largest stone in the rough weighed 60 carats. Amongst other gems found in New South Wales at various times may be mentioned *turquoises*, discovered in 1894, near Bodalla; *topazes*, fine specimens of which have been obtained in the New England district, and *zircon*s and *garnets*. *Turquoises* are also found in thin veins in Victoria, but the deposit is not rich enough to pay for expenses of working. Fine *agates* are found in many places in Victoria, but have not been made use of to any extent. *Garnets* are found in Western Australia, and beautiful specimens of *crocidolite* have been obtained at Yarra Creek in the Murchison district. *Rubies* have been found at various places in New South Wales and Queensland. *Tourmaline* has been found on Kangaroo Island, in South Australia, and *beryls* near Williamstown, Victoria.

### (C). GENERAL.

#### § 15. Numbers Engaged, Wages Paid, and Accidents in Mining.

1. **Total Employment in Mining.**—The number of persons engaged in the mining industry in each State and in the Commonwealth is an index of the significance of the mineral wealth. During the year 1910 the number so employed was as follows:—

## NUMBER OF PERSONS ENGAGED IN MINING, 1910.

State.	Number of Persons Engaged in Mining for						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal and Shale.	Other.	
New South Wales ...	5,247	7,999	2,286	2,028	18,044	1,809	37,413
Victoria ...	16,553	...	40	25	1,532	120	18,270
Queensland ...	6,115	590	2,418	1,932	1,823	1,287	14,165
South Australia ...	950	60	4,150	...	...	1,020	6,180
Western Australia ...	16,279	21	559	326	521	5	17,711
Tasmania ...	682	1,173	2,042	1,598	248	27	5,770
Northern Territory ...	306	65	49	322	...	...	742
Commonwealth ...	46,132	9,908	11,544	6,231	22,168	4,268	100,251

The following table shews the number of persons engaged in mining in the Commonwealth during each of the years 1891, 1901, and 1910, together with the proportion of the total population so engaged:—

## PROPORTION OF PERSONS ENGAGED IN MINING, AUSTRALIA, 1891, 1901, 1910.

State.	1891.		1901.		1910.	
	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.
New South Wales ...	30,604	2,700	36,615	2,685	37,413	2,291
Victoria ...	24,649	2,151	28,670	2,381	18,270	1,425
Queensland ...	11,627	2,934	13,352	2,664	14,165	2,394
South Australia ...	2,683	834	7,007	1,931	6,922	1,726
Western Australia ...	1,269	2,496	20,895	11,087	17,711	6,534
Tasmania ...	3,988	2,695	6,923	4,017	5,770	3,020
Commonwealth ...	74,820	2,341	113,462	2,992	100,251	2,294

**2. Wages Paid in Mining.**—In the next table will be found a statement of the average wages earned by employees in the chief branches of the mining industry in Australia. The value of the figures is rather prejudiced by the wide diversity of conditions, not only in the several States but in different districts of the same State.

The figures quoted for New South Wales in gold mining refer to the Hillgrove district. For copper the figures refer to the Cobar district, and represent rates as awarded by the Arbitration Court. The maximum is paid when copper is £115 per ton or over, and the minimum when the metal is £70 per ton or under, a graduated rate prevailing between the extremes. The rates for silver miners are those ruling at Broken Hill. As regards Queensland the rates for hewing in coal mines are for miners not doing their own wheeling. Where own wheeling is done the rate varies from 2s. 3d. to 5s. 6d. For Western Australia, the rates shewn in gold mining refer to the chief centres only, and are exclusive of Nullagine where much higher rates prevail owing to increased cost of living consequent on the remoteness of the district. Generally speaking, the classification of the labour in the various States does not permit of very satisfactory comparisons.

## WAGES PAID IN MINING INDUSTRY IN THE COMMONWEALTH, 1910-11.

Class of Mine.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
<b>GOLD—</b>	per day.	per day.	per day.	per day.	per day.	per day.
Labourers ...	8/- to 9/-	6/- to 7/-	6/- to 12/-	8/-	9/- to 11/10	7/-
Bracemen ...	8/- to 10/-	6/6 to 7/6	3/6 to 12/-	8/-	9/- to 13/4	7/6
Platmen ...	8/6 to 10/-	6/6 to 7/6	7/- to 13/4	8/-	9/- to 13/4	7/6
Miners ...	9/6 to 10/6	7/6 to 8/4	7/4 to 13/4	9/6	10/- to 13/6	7/6
Wet ...	11/6	8/- to 9/-	10/-	11/-	10/10 to 15/2	8/4
Shaft-sinking ...	11/-	8/4 to 10/-	10/-	11/-	11/8 to 15/-	8/4
Wet ...	...	8/4 to 10/-	...	11/-	12/6 to 16/8	9/2
Blacksmiths ...	10/6 to 11/6	8/4	6/- to 16/8	9/6	12/- to 16/8	8/-
Carpenters ...	10/6 to 12/-	8/4	8/- to 16/8	10/6	12/- to 16/8	8/- to 8/4
Engine-drivers—						
Stationary ...	9/- to 11/-	8/4	9/- to 15/-	10/-	12/- to 15/-	8/-
Winding ...	11/-	10/-	9/10 to 15/-	10/-	12/- to 16/8	8/4
Battery feeders ...	9/3	5/- to 6/-	6/8 to 11/8	8/-	9/- to 11/10	7/6 to 8/-
Shift bosses ...	10/- to 11/3	9/-	9/- to 16/8	13/4	16/8	wk. salary
Machine miners ...	9/6 to 11/6	7/6 to 8/4	9/10 to 14/8	11/-	12/4 to 14/4	8/4
Timbermen ...	10/6 to 11/6	8/-	8/2 to 15/-	10/-	12/- to 15/-	8/4
<b>SILVER-LEAD—</b>						
Labourers ...	9/6	} Not mined.	(Note.—The above figures refer to averages per shift in all metalliferous mines in Q'nsland)	8/-	} Same as gold.	7/6 to 8/6
Bracemen ...	10/6			8/-		8/- to 9/-
Miners ...	11/- to 13/-			9/6		8/4 to 10/-
Blacksmiths ...	10/6 to 13/6			9/6		9/- to 12/2
Carpenters ...	12/6 to 13/6			10/6		9/8 to 13/4
Engine-drivers—						
Winding ...	12/-	} One mine only (see above)	(see above)	10/-	} Do.	9/4 to 19/-
Shift bosses ...	14/-			13/4		10/- to 13/4
Truckers ...	9/6			8/-		7/6 to 9/-
Timbermen ...	11/- to 12/-			10/-		8/4 to 13/4
<b>COPPER—</b>						
Labourers ...	8/- to 9/-	8/-	...	8/-	} Do.	8/6 to 9/-
Miners ...	8/8 to 10/-	8/8	...	9/6		9/6 to 10/6
Blacksmiths ...	10/6	11/8	...	9/6		10/6 to 13/4
Carpenters ...	11/-	10/-	...	10/6		9/6 to 12/6
Engine-drivers—		} One mine only (see above)	(see above)			
Winding ...	10/6 to 11/-			10/-		11/-
Bracemen ...	8/6			8/-		9/6
Drill sharpeners ...	9/2			10/-		9/6 to 10/6
Timbermen ...	8/8 to 9/6	9/-	...	10/-		10/- to 11/6
Machine miners ...	9/6 to 10/6	...	...	11/-		9/6 to 10/6
Miners in wet ground ...	...	(sluicing)	...	11/-		15/- per shift
<b>TIN—</b>						
Labourers ...	8/-	7/6	...	...	} Do.	7/- to 8/6
Miners ...	9/6 to 9/10	...	...	...		7/6 to 9/-
Blacksmiths ...	10/6	10/-	...	...		9/- to 13/4
Carpenters ...	10/6	10/-	...	...		9/- to 12/-
Engine-drivers—						
Stationary ...	9/- to 11/-	...	(see above)	Not mined.		9/- to 10/-
Shift bosses ...	10/-	10/-	...	...	} Do.	8/- to 10/6
Nozzlemen ...	9/6	8/4	...	...		8/- to 9/6
Racemen ...	8/8	7/6	...	...		7/- to 9/6
Face bosses ...	...	...	...	...		9/- to 15/-
Boxmen ...	9/-	8/4	...	...		...
Sluicemen ...	8/8	8/4	...	...		8/6 to 9/6
<b>COAL—</b>						
Deputies ...	9/- to 11/4	8/- to 12/-	10/-	...	14/3	8/- to 8/6
Shot firers ...	10/- to 11/4	11/2	10/-	...	13/5	...
Shiftmen ...	7/- to 12/4	7/6 to 10/2	10/6 to 11/6	...	13/5	7/- to 8/-
Wheeler ...	4/10 to 9/1	6/6 to 9/2	4/- to 10/-	...	11/7	3/- to 7/-
Overmen ...	£3 to £5/10/wk	12/- to 15/-	13/4	...	£5 per week.	10/- to 11/8
Miners ...	10/- to 13/6	...	10/- to 11/-	...	13/-	8/- to 10/-
Machine-men ...	11/- to 12/5	12/5	10/-	...	13/5 to 14/11	...
Engine-men—						
Winding ...	11/- to 12/4	10/-	10/- to 12/-	Not mined.	} 12/7	...
Hauling ...	10/- to 11/3	10/-	9/- to 10/-	...		8/4
Other ...	8/9 to 11/3	9/2	8/6	...		6/- to 8/-
Labourers ...	7/- to 9/-	6/- to 8/-	7/6	...		6/- to 7/6
Blacksmiths ...	9/- to 11/4	9/- to 10/-	6/- to 10/-	...		7/- to 8/-
Carpenters ...	9/- to 11/-	9/- to 11/2	7/8 to 9/4	...		6/6 to 8/-
Safety lampmen ...	6/6 to 10/9	...	...	...	...	...
Platmen or banksmen	6/- to 9/6	7/- to 9/2	4/6 to 9 -	...	11/5	6/-

\* Contract 10/6 to 17/- . At State Mine 3/- per ton. The higher rates all at State Mine.

**3. Accidents in Mining, 1910.**—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1910:—

**NUMBERS KILLED AND INJURED IN MINING ACCIDENTS, 1910.**

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
<b>KILLED.</b>							
Coal and shale ...	21	3	3	...	2	...	29
Copper ...	7	...	5	} 3	...	6	} 97
Gold ...	4	12	8		27	2	
Silver, lead and zinc...	17	...	2		...	...	
Tin ...	1	...	...		...	...	
Other minerals ...	...	...	3		...	...	
Total ...	50	15	21	3	29	8	126
<b>INJURED.</b>							
Coal and shale ...	109	22	59	...	78	4	272
Copper ...	9	...	54	} 5	3	17	} 801
Gold ...	7	66	70		504	17	
Iron ...	...	...	...		...	...	
Silver, lead and zinc...	20	...	3		...	10	
Tin ...	...	...	...		2	8	
Other minerals ...	...	...	5		...	1	
Total ...	145	88	191	5	587	57	1,073

**§ 16. State Aid to Mining.**

**1. Introduction.**—The development of the mineral resources of the several States is fostered and encouraged by the respective Governments in various ways. It is proposed to deal below only with the more direct and special methods by which assistance is rendered for developmental or other purposes, and not to include herein particulars of certain general developmental works found in nearly all civilised countries, such as geological surveys and schools of mines; there is also, as a general rule in all States, some provision for free assays for prospectors. Particulars as to the total expenditure on mining development in each State from loan funds are given in the section of this book dealing with the subject of *State Finance* (see Section XX. § 4); it should be noted, however, that in addition considerable sums have been spent in some of the States on Government aid to mining out of the consolidated revenue.

**2. New South Wales.**—Though there is no Act in force in this State specifically relating to the provision of loans in aid of mining development and prospecting, various arrangements have been made for rendering financial assistance to prospectors and others.

(i.) *Prospecting Votes.* Since the year 1887 annual appropriations have been made by Parliament “to promote prospecting for gold or other minerals, and to encourage the opening of new goldfields.” The total amount expended under these votes to the 31st

December, 1910, was £416,215. During the year 1910 aid was granted by the Prospecting Board in 208 cases, and refused in 158, while the total amount expended from the vote during the year was £11,280.

(ii.) *Boring Plants.* No special provision exists in New South Wales for the expenditure of funds on boring for minerals, though on several occasions, as, for instance, where the proving of the occurrence of coal in certain localities was considered to be a question of national importance, diamond drills have been provided from special votes.

(iii.) *Government Batteries.* Provision has been made for the erection of crushing batteries by the State, and also for assistance to prospectors in the erection of plants. In the latter case the amount advanced is to be repaid by agreement with the Secretary for Mines.

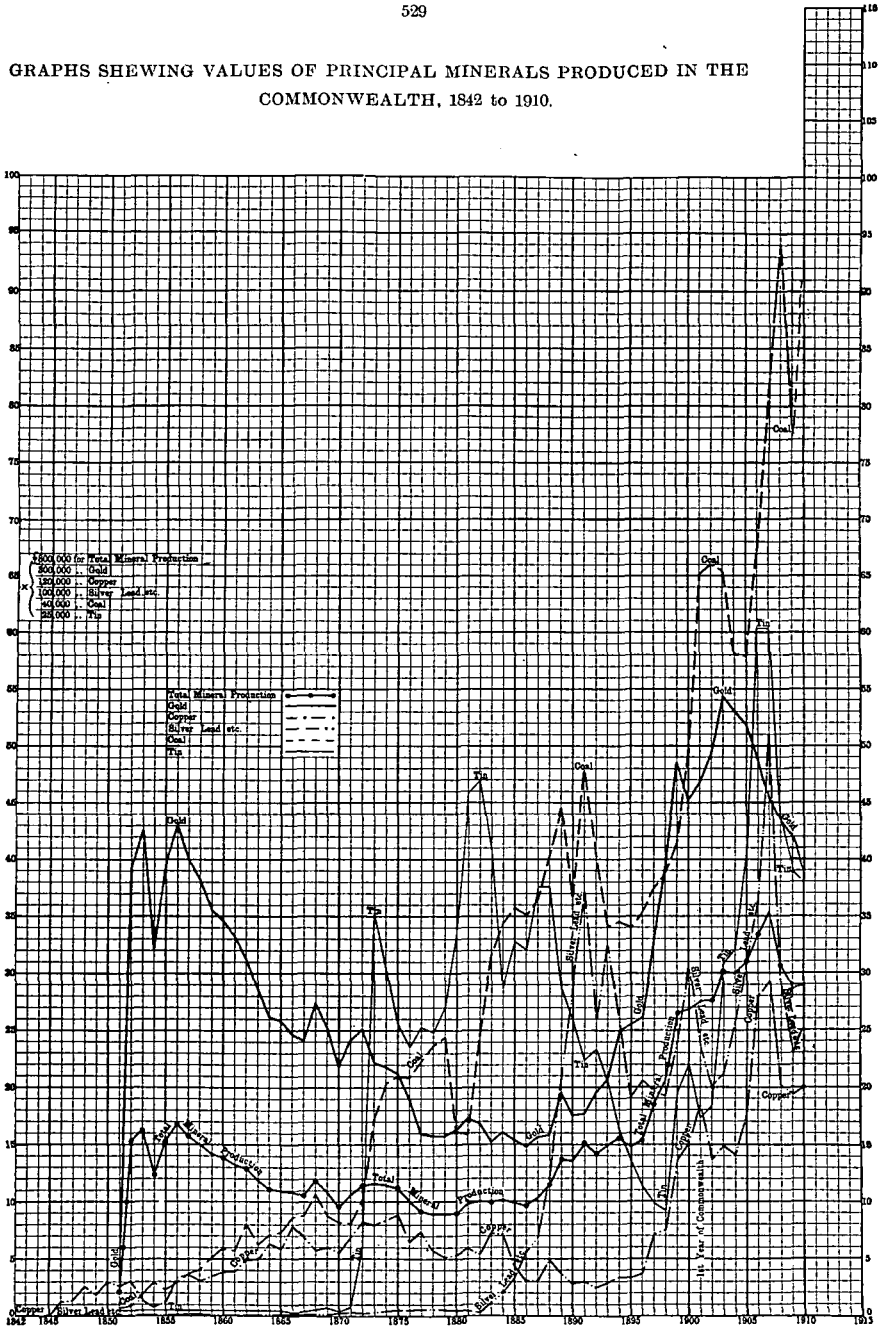
3. *Victoria.*—State assistance to mining in Victoria is provided for by the Mining Development Acts, 1896 to 1911. The original Act provided for the advances and grants to be made out of the sum of £140,000 raised by the issue of Treasury bonds, but an amending Act of 1898 provided that they should be paid also out of any moneys authorised from time to time. Various Acts have been passed for the appropriation of money, generally out of surplus revenue, for mining development or for special purposes in connection therewith, such as the equipment of Schools of Mines, the purchase of cyanide patents, of a metallurgical laboratory, or of boring machinery. A considerable amount of boring for the purpose of locating mineral deposits is also carried out by the Government.

(i.) *Advances to Miners for Prospecting.* Any two or more persons in combination may apply for an advance not exceeding £250 for the purpose of assisting them to prospect for any minerals or metals, and, subject to the usual evidence as to *bona fides*, undertakings to secure repayment, and proof of previous expenditure of £1 for every £1 granted, the Minister may recommend the granting of the loan.

(ii.) *Advances to Companies for Development of Mining.* Under Part I. of the Act of 1896, a company may apply for a loan for the purpose of (a) carrying on pioneer mining, (b) procuring and erecting machinery, and (c) providing all works necessary for carrying on such pioneer mining. The loans to any one company may not exceed £10,000, and are subject to the same conditions as advances to miners (see (i.) above). Under the amending Act of 1908 a sum of not more than £50,000 is authorised to be advanced by way of loan to companies for development of deep alluvial or of deep quartz mining. Evidence and information must be furnished by an applicant for a loan as to the history of the company, the nature of the land upon which it is intended to carry on mining operations, the machinery and appliances which it is proposed to use, and as to the estimated cost of such machinery; and a statement must be provided shewing the period of time over which the advance is to extend. Applications are referred by the Minister to the Government Geologist for report and are then dealt with by the Executive Council. Interest on loans at the rate of  $3\frac{1}{2}$  per cent. per annum must be paid half-yearly, and the payments to the Treasurer form a first charge on the profits and assets, except uncalled capital, of the company.

(iii.) *The Establishment of Plant for Testing Metalliferous Material.* Government testing plants may be established only in districts where there is no battery where ore is crushed or dealt with for payment. If the Minister be of opinion that there is a necessity in the interest of the mining industry for the establishment of a testing plant in any district, he may submit to the Treasurer such evidence as in his opinion is sufficient to justify the expenditure necessary to procure and erect the same, and the Treasurer may recommend the Governor to grant, and the Governor may grant, the necessary funds. The purchase, transport, erection, and removal of any testing plant, and the rates to be charged for its use must be in accordance with regulations made under the Act.

GRAPHS SHEWING VALUES OF PRINCIPAL MINERALS PRODUCED IN THE  
COMMONWEALTH, 1842 to 1910.



(See pages—for total mineral production, 484; gold, 486; silver, 494; copper, 497; tin, 501; coal, 511.

EXPLANATION OF GRAPHS—The values shewn in the above diagrams are those of the total Commonwealth production of the most important minerals in successive years from 1842 to 1910.

The base of each small square represents an interval of one year, and the vertical height represents, in the case of gold £300,000; copper, £120,000; silver, lead, etc., £100,000; coal, £40,000; tin, £25,000; and total mineral production, £800,000.

The names of the various minerals are written on the graphs which respectively represent them, and the distinctive types of line used are exhibited in detail in the central portion of the diagram.



Of the twenty-four batteries which had been erected by the Government up to the end of the year 1910, sixteen have been managed by local committees, without expense to the Mines Department as far as the cost of working is concerned, while the remaining eight were worked directly under the supervision of departmental officers. The quantity of ore treated during 1910 was 2827 tons for a yield of 2349 ozs. of gold, shewing an average of 16½ dwts. per ton. The total cost of working and maintenance during the year amounted to £2982, and the sum received from the public for crushing was £841, giving a net cost of £2141. From 1897, when the first battery was erected, to the end of 1910, a total of 36,074 tons, yielding, 22,313 ozs., has been treated. A sum of £22,705 has been spent on the erection of the twenty-four plants; the amount received for crushing was £7905, and as the cost of maintenance was £30,012, the net cost amounted to £22,107.

Diamond drills are hired out by the Government under specified conditions to companies at a rental of from £2 to £4 per month according to size and kind of drill, £200 being lodged as security to cover breakages, and hand-boring plants are also hired under similar conditions at a rental of 10s. per month.

(iv.) *Construction of Roads and Tracks for Mining.* Under Part II. of the Act of 1896 the Minister may, subject to certain conditions, on the application of the council of any shire situated in an outlying or mountainous part of Victoria, construct a road suitable for the transport of mining machinery and appliances to any locality where mining is being carried on by more than one company, or by holders of miners' rights.

(v.) *Construction of Races and Dams.* Under Part IV. of the Act of 1896 the Minister is empowered, subject to the report of the Government Geologist and the Chief Engineer of Water Supply, and to the approval of the Treasurer and Governor in Council, to construct races and dams for working alluvial deposits for gold, to divert water for such uses subject to all existing rights, and to make regulations for the payment of rates for the use of the water.

(vi.) *Dissemination of Information.* Part VI. of the Act of 1896 provides that if the Minister be of opinion that it is advantageous to expend money for the purpose of disseminating information in Great Britain and other countries as to the mining resources of Victoria, and for holding in Victoria a public exhibition of mining machinery and appliances, he may recommend the Governor through the Treasurer to grant moneys necessary for the purpose.

(vii.) *Expenditure on Government Aid to Mining.* The following statement shews the total expenditure under the Mining Development and Surplus Revenue Acts up to the end of the year 1910 :—

#### VICTORIA.—EXPENDITURE ON GOVERNMENT AID TO MINING

TO END OF YEAR 1910.

Particulars.	Advances to Mining Com- panies.	Advances to Pros- pectors.	Boring for Gold and Coal.	Roads and Tracks.	Erection of Testing Plants.	Mis- cellaneous.	Total.
Amount	£ 142,977	58,429	59,231	69,425	22,705	48,224	400,991

In addition, the expenditure from votes from the 30th June, 1904, to the 30th June, 1910, was £76,771 on boring for gold and coal, and £16,417 on testing plants.

The repayments by companies of the loans advanced amounted on the same date to £17,851, and by parties of miners to £1977. A sum of £5292 has been repaid for part of the cost of boring, and also hire of plant and loss of diamonds. Several companies have

discontinued operations, and their security in the way of plant was taken possession of and sold for a total of £13,956. The amount of loans was, however, £30,626, and thus a loss of £16,670 was incurred.

4. **Queensland.**—Special assistance granted to the mining industry in this State may be conveniently dealt with under the headings specified below:—

(i.) *Assistance to Prospectors.* Assistance is granted in connection with sinking wells and providing equipment or rations for small parties of miners, and in some cases for prospecting or developing lodes. Such assistance is granted directly by the Minister, sometimes to a local authority, sometimes through the warden, and sometimes to miners or progress associations.

(ii.) *Grants for Roads and Bridges to Gold and Mineral Fields.* These grants are made either for the purpose of repairing existing roads and bridges or of constructing new ones; they are made with Executive approval, generally to local authorities.

(iii.) *Loans in aid of Deep Sinking.* These loans are made with the approval of the Executive in order to prove lodes at a depth or for diamond drilling.

(iv.) *The Mining Machinery Advances Act 1906.* Under this Act loans may be made for (a) procuring and erecting machinery for carrying on mining operations, or (b) procuring, erecting, or removing and re-erecting plant for treating minerals. Loans are granted by the Minister on the approval of the Governor in Council, interest at a rate not exceeding 5 per cent. per annum being charged. There is no limit to the amount which may be advanced, but the borrower must contribute £1 for £1 towards the work for which the loan is granted. The borrower must also execute a bill of sale or mortgage over the machinery or property, but the moneys advanced are not recoverable against the borrower personally, but only against the secured property.

(v.) *Amounts Granted or Advanced, 1910.* The total amount granted or advanced under the several systems above mentioned to the end of 1910 was as follows:—

**QUEENSLAND.—PARTICULARS OF AMOUNTS GRANTED OR ADVANCED, 1910.**

Purposes for which Granted, etc.	Prior to 1910.	During 1910.	Total to end of 1910.
	£	£	£
Assistance to prospectors ... ..	30,398	1,391	31,789
Grants for roads and bridges ... ..	15,314	3,732	19,046
Loans in aid of deep sinking ... ..	58,050	4,770	62,820
Advances under Act of 1906 ... ..	3,751	763	4,514
Total ... ..	107,513	10,656	118,169

In addition special sums are occasionally granted or advanced in certain cases; for example, in 1908 sums of £2460 and £306 were advanced for the purposes of oil boring and coal prospecting, respectively; while in 1910, there was a special allowance of £3505 for boring for coal.

5. **South Australia.**—By regulations made in February, 1894, and amended in January, 1899, under Part VI. of the Mining Act of 1893, provision is made for State aid to mining by way of:—(i.) Rewards to discoverers, (ii.) subsidies, and (iii.) loan of boring plant.

(i.) *Rewards to Discoverers.* Rewards may be paid to the discoverer (being the holder of a miner's right) of any new mineral district, or of any new and valuable

deposits of metals, minerals, coal, or oil. The amount of the reward depends upon the distance of the discovery from the nearest payable mineral deposits already worked, and upon the number of men employed on the new field within six months after the report of the discovery has been made; the reward may not in any case exceed £1000. No rewards have yet been granted.

(ii.) *Subsidies.* Applications for subsidies may be made by any person engaged in deep sinking, prospecting, or mining. No subsidy may exceed 100 per cent. on the amount proposed to be expended by the applicant, and the total grant to any one person or company may not exceed £1000. Fifty per cent. of the net profits must be applied in payment of the subsidy, and a bill of sale of all chattels belonging to the applicant and used in connection with the mine must be executed. If an applicant for assistance is mining on private land, the granting of a subsidy is subject to additional conditions. The total amount advanced by subsidies up to the 30th June, 1911, was £53,822; while the total repayments to date amounted to £6112. Portion of the outstanding debit is represented by machinery that has fallen into the hands of the Government.

(iii.) *Loan of Boring Plant.* The regulations also provide for the loan of diamond drills. There are two Government boring plants in South Australia, the capital expenditure thereon up to the 30th June, 1909, amounting to £6057.

(iv.) *Government Batteries and Cyaniding Plants.* There are four Government batteries and cyanide works in South Australia, the capital cost thereof amounting to £14,319. Up to the end of the year 1910 the total quantity of ore treated by these plants amounted to 18,338 tons, from which 15,207 ounces of gold, valued at £55,669, were extracted.

**6. Northern Territory.**—In the Northern Territory, Government assistance in the form of free rations is granted to prospectors and free assays are made. There are three Government boring plants, and two batteries and cyanide plants (both the latter being situated in the Macdonnell Ranges). The total amount of ores treated at the batteries up to the end of 1910 was 11,349 tons, from which 14,067 ounces of gold, valued at £52,133, were recovered.

**7. Western Australia.**—In this State, Government aid to mining is provided both under the Mining Development Act 1902 and under a more general vote for developmental purposes. A large amount of general developmental work has been carried out by the Government, particularly in regard to water supply; particulars of the eastern goldfields water supply scheme may be found in the section of this book dealing with *Water Conservation and Irrigation* (see Section XIV. § 1). The Act of 1902, referred to above, is in many respects similar to the Victorian Act of 1896; its chief provisions may conveniently be considered under the headings indicated below.

(i.) *Advances to Prospectors.* The Minister may, after obtaining a report from a professional officer, grant a loan not exceeding £300 to any miner who applies for assistance to enable him to prospect for gold or minerals. An applicant must furnish the necessary descriptions, statements, and information, verified by statutory declarations, and for every £1 advanced the borrower must expend £1 in work, labour, or material.

(ii.) *Advances for Pioneer Mining.* The purposes for which, and the conditions upon which, advances may be made are similar to those specified under Part 1 of the Victorian Act of 1896 (see 3 ii. above); the amount advanced to any one borrower is limited to £1000.

(iii.) *Establishment of Testing Plants.* Plant for crushing, ore-dressing, cyaniding, or smelting may either be established by the Minister or he may subsidise companies who are willing to erect and work such plant for the public at prescribed rates. Any such plant may only be erected in a district (a) in which large deposits of ore exist,

(b) where existing plant for treating deposits in bulk at reasonable rates is not available, and (c) where the establishment of such plant is necessary for the development of mining.

In 1910 there were thirty-four State batteries and twenty-four cyanide plants in operation; there were also five slime plants and two tin-dressing plants. The total amount expended on the erection of State batteries up to the end of 1910 was £91,982 from revenue, and £192,319 from loan, giving a total of £284,301. During the year receipts amounted to £75,975, and working expenditure to £77,458.

The total value of gold and tin recovered to the end of 1910 at the State plants was £3,480,671, resulting from the treatment of 784,407 tons of gold ore and 45,492 tons of tin ore.

(iv.) *Assistance for Boring.* Subject to certain conditions the Minister may agree to pay not more than half the cost of boring either for gold, minerals, or water, and with the approval of the Governor and after receiving a report from the proper officer that such boring is in the general interest of the State, he may pay the whole cost.

(v.) *Miscellaneous.* The Minister may advance or himself expend moneys (a) to drain any area, (b) to assist mining by sinking or cross-cutting; (c) to sink shafts for minerals at great depths, and (d) to provide means of transport for miners to prospect unproved country.

(vi.) *Particulars of Advances, 1910.* The following statement shews the sums advanced during the year 1910 under the provisions of the Mining Development Act:—

**WESTERN AUSTRALIA.—ADVANCES MADE IN 1910 UNDER MINING DEVELOPMENT ACT, 1902.**

Particulars.	Advances in Aid of Mining Work and Equipment of Mines.	Advances in Aid of Boring.	Subsidies to Crushing Plants.	Providing Means of Transport.	Total.
Amount... £	4,873	276	930	202	6,281

In addition to the above, amounts totalling £1620 were expended from the Mining Development Vote on various matters, such as water supply, roads, subsidies to assist cartage of ore, drainage, timber tramways, and subsidies for development work done below the 100 feet level in small mines. Subsidies to the extent of £1240 were paid to private crushing plants, the condition being that they crush for the public at fixed rates. The receipts under the Mining Development Act, exclusive of interest payments, amounted to £2333 for refunds of advances, £141 for sales of plant, and £728 miscellaneous—a total of £3202.

8. *Tasmania.*—In Tasmania provision is made for State aid to mining under the Deep-Sinking Encouragement Acts 1899, 1900, and 1901. Under these Acts sums of £5000, £2000, and £1000 respectively were provided for assisting persons and companies to sink shafts or to drive tunnels below a specified depth, the amount advanced in any particular case varying according to the amount expended by the borrower. The total amount advanced to October, 1909, was £6861, granted to five companies in sums ranging from £682 to £1452, leaving an unexpended balance of £1139. None of the companies to whom the advances were made has been successful, and consequently none of the sums advanced, which were to be repaid out of profits, has been refunded. A sum of £200 was placed on the estimates for 1910-11 for the purpose of assisting prospectors, the money to be expended on the £ for £ principle, not exceeding £50 in any one case.

## SECTION XIII.

## MANUFACTURING INDUSTRIES.

## § 1. General.

1. **Industrial Progress.**—The statistics of manufactures in the Commonwealth during recent years shew that many industries have now been permanently established on a secure basis, and also indicate a consistent progress both in regard to the extension of existing industries and the establishment of new ones. The scale on which many manufactories are established in Australia naturally appears small in comparison with that of similar establishments in older countries of the world; but it should be remembered that the scope of Australian manufactories is necessarily limited by the comparative sparseness of the population, and that, prior to 1901, development was retarded by the existence of intercolonial tariffs.

(i.) *The Gold Discoveries, 1851.* During the period prior to the gold discoveries (1851) little was done in regard to manufacturing industries in Australia. Such industries as had then been established were chiefly connected with the preparation of food-stuffs, and were to a large extent called into being by the isolated position of the country. It was found that, owing to the comparatively high prices which could be obtained for the products of the pastoral industry, those engaged in such pursuits in Australia could compete successfully in the world's markets. Owing to the sparseness of its population and to the distance of Australia from the world's centres of distribution, there was but little incentive towards any decided progress in agriculture, which was accordingly for many years almost entirely subsidiary to sheep and cattle raising. With the adoption of improved methods of agriculture, however, there were signs of an early extension in the cultivation of wheat, when the discovery of gold in 1851 completely changed the economic aspect in Australia and effected a revolution in all industrial relations. The large towns were practically depleted of their male able-bodied population, and the first effect of the gold rush upon manufacturing industries was disastrous. The supply of labour in many occupations was exhausted, and most branches of industry came to a standstill. There was, however, a rapid change. A decline in the activity of the gold-fields threw many immigrants, whose early lives had been passed in English cities, out of employment. The surplus of labour thus engendered accumulated in Melbourne and a few other large towns, establishing incipient artisan communities. This no doubt intensified the early impulses towards industrial employment. In Victoria, in particular, it was sought to encourage the investment of capital in manufacturing enterprises by the establishment of protective customs duties. Manufacturing industries were revived on a larger scale than formerly, and the population attracted by the discovery of gold remained in Australia and furnished the labour necessary to operate the factories thus established.

(ii.) *Later Progress.* Soon after the discovery of gold, the construction of the first railways (1854) and the re-establishment of regular steamship communication with Europe (1856) helped to encourage the nascent industrial activity. The Colonies of New South Wales and Victoria, which had recently (1855) received the benefits

of responsible government, soon turned their attention to the settlement of an agricultural population on the land. The Acts which were passed had a beneficial effect on the working classes, giving them opportunities for employment not previously open to them, and fostering the manufacturing industries by increasing the measure of primary production. During the following years the various manufacturing industries prospered. The statistics of the States are not sufficiently complete or uniform to enable a statement of the progress of these industries to be given. The following table, however, shewing, so far as returns are available, the number of factories and the number of employees in each State at decennial periods since 1861 and in 1910, will serve to indicate generally the progress which has been made:—

#### NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1910.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF FACTORIES.							
1861	601	531	...	...	...	...	...
1871	1,813	1,740	...	...	...	...	...
1881	2,961	2,488	571†	823†	...	...	...
1891	3,056	3,141	1,328†	996†	175	...	...
1901	3,367	3,249	2,110†	1,335†	662	420*	11,143†
1910	4,823	4,873	1,563	1,278	680	605	13,822
NUMBER OF EMPLOYEES.							
1861	...	4,395	...	...	...	...	...
1871	13,583	19,569	...	5,629†	...	...	...
1881	31,191	43,209	...	10,995†	...	...	...
1891	50,879	53,525	...	14,099†	...	...	...
1901	66,135	66,529	26,172†	19,233†	12,198	7,466*	197,783†
1910	99,746	102,176	33,944	27,010	14,107	9,848	286,831

\* For 1902. † Not on same basis as other States. ‡ Not on same basis for some of States as in 1910.

NOTE.—In this and all subsequent tables, except where specially mentioned, "Number of Employees" includes working proprietors.

Since the inauguration of the Commonwealth, the throwing open of the whole of the Australian markets to the industrial products of each State has facilitated the internal distribution of the products of Australian industry.

**2. Defects in Industrial Statistics.**—A complete statistical account of the growth of the manufacturing industries in Australia unfortunately cannot be given for any lengthy period, owing to the fact that the necessary statistics have not been collected in past years by the several States upon a definite and identical basis. Even in respect of either the definition of a "factory" or (so far as they might be included in related returns) the statistics of persons employed therein, there was formerly no common agreement. The relatively minor place that manufacturing industry held in relation to the total activity of Australia was, perhaps, responsible for the fact that the necessity for uniform method was not earlier recognised.

In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used." This agreement was adopted for the States generally at the Conference of State Statisticians in 1902, when it was decided, however, that the term "factory" should include also "all establishments, whether making for the trade, wholesale or retail, or for export." It was further agreed that

industries should be arranged, as far as possible, under a uniform classification. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based date back only as far as the year 1903, when the resolutions of the conference first came to be put into force. All the States did not, however, fall completely into line, and, as may be seen in the succeeding parts of this section, the comparisons afforded by the returns for the years 1903 to 1906 inclusive, are in some cases subject to various limitations. At the Conference of Statisticians held in Melbourne in 1906 special consideration was given to the methods to be adopted for the collection of statistical information regarding primary and secondary production and industry. A definite classification of industries was adopted, and a set of forms for the collection and compilation of industrial statistics on a definite and uniform basis in each State was agreed upon. The States have not, even yet, fallen entirely into line in collecting and classifying the returns. The particulars for the years 1909 and 1910 are, however, in more complete co-ordination than those for previous years, and it will be possible to give particulars for future years for the several States in greater detail and on a more uniform basis throughout.

**3. Classification of Manufacturing Industries.**—Under the classification adopted at the Conference of Statisticians held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein; many of the categories were also subdivided. Where two or more industries are carried on by one proprietor in one building, each industry is, when possible, treated as a separate establishment. The statement given below shews the classification which has been adopted; it must be understood, however, that this classification does not pretend to be exhaustive, but merely serves as a guide for the collection and presentation of statistics in the several States on a definite and uniform basis:—

#### CLASSIFICATION OF MANUFACTURING INDUSTRIES.

<p><b>CLASS I.—TREATING RAW MATERIALS, ETC.</b></p> <p>Boiling-down, Tallow Refining, etc.</p> <p>Tanneries</p> <p>Woolscouring &amp; Fellmongering</p> <p>Chaff-cutting, etc.</p> <p><b>CLASS II.—OILS AND FAT, ETC.</b></p> <p>Oil and Grease</p> <p>Soap and Candles</p> <p><b>CLASS III.—STONE, CLAY, GLASS, ETC.</b></p> <p>Bricks and Tiles</p> <p>Glass (including Bottles)</p> <p>Glass (Ornamental)</p> <p>Lime, Plaster, Cement and Asphalt</p> <p>Marble, Slate, etc.</p> <p>Modelling, etc.</p> <p>Pottery and Earthenware</p> <p><b>CLASS IV.—WORKING IN WOOD.</b></p> <p>Boxes and Cases</p> <p>Cooperage</p> <p>Joinery</p> <p>Saw Mills</p> <p>Wood-turning, etc.</p> <p><b>CLASS V.—METAL WORKS, MACHINERY, ETC.</b></p> <p>Agricultural Implements</p> <p>Brass and Copper</p>	<p>Cutlery</p> <p>Engineering</p> <p>Galvanised Iron-working</p> <p>Ironworks and Foundries</p> <p>Lead Mills</p> <p>Railway Carriages</p> <p>Railway and Tramway Work-shops</p> <p>Smelting</p> <p>Stoves and Ovens</p> <p>Tinsmithing</p> <p>Wireworking</p> <p>Other Metal Works</p> <p><b>CLASS VI.—FOOD AND DRINK, ETC.</b></p> <p>Bacon Curing</p> <p>Butter Factories</p> <p>Butterine and Margarine</p> <p>Cheese Factories</p> <p>Condensed Milk</p> <p>Meat and Fish Preserving</p> <p>Biscuits</p> <p>Confectionery</p> <p>Corn-flour, Oatmeal, etc.</p> <p>Flour Mills</p> <p>Jam and Fruit Canning</p> <p>Pickles, Sauces, and Vinegar</p> <p>Sugar Mills</p> <p>Sugar Refining</p> <p>Aerated Waters, Cordials, etc.</p> <p>Breweries</p> <p>Condiments, Coffee, Spices, etc.</p> <p>Distilleries</p> <p>Ice and Refrigerating</p> <p>Malting</p> <p>Tobacco, Cigars, etc.</p>	<p><b>CLASS VII.—CLOTHING AND TEXTILE FABRICS.</b></p> <p>Woollen and Tweed Mills</p> <p>Boots and Shoes</p> <p>Slop Clothing</p> <p>Clothing (Tailoring)</p> <p>Dressmaking and Millinery—</p> <p>Makers' material</p> <p>Customers' material</p> <p>Dyeworks and Cleaning</p> <p>Furriers</p> <p>Hats and Caps</p> <p>Waterproof and Oilskin</p> <p>Shirts, Ties, and Scarfs</p> <p>Rope and Cordage</p> <p>Tents and Tarpaulins</p> <p><b>CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.</b></p> <p>Electrotyping &amp; Stereotyping</p> <p>Paper-making, Paper Boxes, Bags, etc.</p> <p>Photo-engraving</p> <p>Printing and Binding</p> <p><b>CLASS IX.—MUSICAL INSTRUMENTS, ETC.</b></p> <p>Musical Instruments and Sewing Machines</p> <p><b>CLASS X.—ARMS &amp; EXPLOSIVES</b></p> <p>Explosives</p>
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## CLASSIFICATION OF MANUFACTURING INDUSTRIES.—Continued.

## CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC.

Coach and Wagon Building  
Cycles  
Perambulators  
Saddlery, Harness, etc.  
Spokes, etc.

## CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING.

Docks and Slips  
Sailmaking  
Ship and Boat Building and Repairing

## CLASS XIII.—FURNITURE, BEDDING, ETC.

Bedding, Flock, & Upholstery  
Billiard Tables  
Furniture and Cabinet Making  
Picture Frames  
Window Blinds

## CLASS XIV.—DRUGS AND CHEMICALS, ETC.

Chemicals, Drugs, and Medicines  
Fertilisers  
Paints, Varnishes, and By-products

## CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.

Surgical, Optical, and other Scientific Instruments

## CLASS XVI.—TIMEPIECES, JEWELLERY, &amp; PLATED WARE.

Electro-plating  
Manufacturing Jewellery, etc.

## CLASS XVII.—HEAT, LIGHT, AND POWER.

Coke Works  
Electric Apparatus  
Electric Light and Power  
Gas Works and Kerosene Lamps and Fittings, etc.  
Hydraulic Power

## CLASS XVIII.—LEATHERWARE (N.E.I.)

Leather Belting, Fancy Leather, Portmanteaux & Bags

## CLASS XIX.—MINOR WARES.

Basket and Wickerware, Matting, etc.  
Brooms and Brushware  
Rubber Goods  
Toys  
Umbrellas  
Other Industries

## § 2. Number of Manufactories.

1. **General.**—In stating the number of factories in the States of the Commonwealth it is to be remembered that in the collection of statistics, for years prior to 1907, the same basis has not been adopted in each State. In 1906 in Queensland, for example, 689 factories would have been added under the system previously adopted in that State. This would bring the total up to 1993 on the former basis. The factories excluded, however, are those employing only two hands and no power, and the difference in other respects is not material.

In the following table shewing the total number of manufactories in the Commonwealth during the years 1903 to 1910, it should be noted that not only are the results affected by differences of classification, but also that the number of factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers.

## MANUFACTORIES OF THE COMMONWEALTH, 1903 to 1910.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
1903 ...	3,476	4,151	2,001*	906*†	586	431	11,551
1904 ...	3,632	4,208	1,909*	906*	672	444	11,771
1905 ...	3,700	4,264	1,911*	985	649	436	11,945
1906 ...	3,861	4,360	1,304	1,012	665	373	11,575
1907 ...	4,432	4,530	1,359	1,086	643	505	12,555
1908 ...	4,453	4,608	1,371	1,237	627	557	12,853
1909 ...	4,581	4,755	1,420	1,265	632	544	13,197
1910 ...	4,823	4,873	1,563	1,278	680	605	13,822

\* Not on same basis as other States. † 1904 results repeated.

(i.) *Classification of Factories in Commonwealth, 1906 to 1910.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1906 to 1910, classified on the basis indicated in § 1.3 hereof:—



## CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1906 to 1910.

Class of Industry.	1906.	1907.	1908.	1909.	1910.
	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ....	742	807	812	823	825
II. Treating oils and fats, animal, vegetable, etc. ....	99	92	97	94	100
III. Processes in stone, clay, glass, etc. ....	610	626	627	645	703
IV. Working in wood ....	1,119	1,215	1,322	1,411	1,474
V. Metal works, machinery, etc. ....	1,394	1,504	1,548	1,588	1,620
VI. Connected with food and drink, etc. ....	2,177	2,250	2,253	2,258	2,286
VII. Clothing and textile fabrics, etc. ....	2,335	2,661	2,681	2,774	2,982
VIII. Books, paper, printing and engraving ....	919	964	993	1,011	1,062
IX. Musical instruments, etc. ....	10	16	17	18	20
X. Arms and explosives ....	8	8	8	9	13
XI. Vehicles and fittings, saddlery and harness, etc. ....	941	1,071	1,105	1,117	1,195
XII. Ship and boat building and repairing ....	83	70	76	84	85
XIII. Furniture, bedding, and upholstery ....	418	470	483	512	560
XIV. Drugs, chemicals, and by-products ....	156	144	153	164	176
XV. Surgical and other scientific instruments ....	26	26	29	30	35
XVI. Jewellery, timepieces, and platedware ....	121	142	153	150	155
XVII. Heat, light, and power ....	272	309	307	314	328
XVIII. Leatherware, n.e.i. ....	41	45	54	55	60
XIX. Minor wares, n.e.i. ....	104	135	136	140	143
Total ... ..	11,575	12,555	12,853	13,197	13,822

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 (see § 1. 2 hereof) is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used." The total increase in the number of factories according to this table from 1906 to 1910 was 2247, or an average of 562 a year. The state of the manufacturing industries throughout Australia cannot, however, be gauged from a mere enumeration of the number of factories. Some of the factories concerned were practically in their infancy, employing but few hands, while others were developed on a large scale. Also, as pointed out previously, amalgamations may in some instances account for a reduction in the numbers.

(ii.) *Classification of Factories in each State, 1910.* The following table shews the number of factories in each State of the Commonwealth at the end of the year 1910, classified according to the nature of the industry. (See classification given in § 1. 3 hereof):—

## CLASSIFICATION OF FACTORIES IN EACH STATE, 1910.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Cwltth.
	No.	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricul. and pastoral pursuits, etc. ....	289	324	44	126	25	17	825
II. Treating oils and fats, animal, vegetable, etc. ....	43	21	17	13	4	2	100
III. Processes in stone, clay, glass, etc. ....	298	212	39	80	42	32	703
IV. Working in wood ....	620	350	233	98	63	110	1,474
V. Metal works, machinery, etc. ....	476	650	301	177	61	55	1,620
VI. Connected with food and drink, etc. ....	767	633	381	255	147	103	2,286
VII. Clothing and textile fabrics, etc. ....	936	1,340	228	217	133	128	2,982
VIII. Books, paper, printing & engraving ....	407	369	133	65	59	29	1,062
IX. Musical instruments, etc. ....	13	5	...	2	...	...	20
X. Arms and explosives ....	5	8	...	...	...	...	13
XI. Vehicles and fittings, saddlery and harness, etc. ....	361	410	149	145	54	76	1,195
XII. Ship and boat building & repairing ....	42	10	12	7	6	8	85
XIII. Furniture, bedding, and upholstery ....	176	228	70	38	31	17	560
XIV. Drugs, chemicals, and by-products ....	76	74	3	12	11	...	176
XV. Surgical and other scientific instruments ....	11	14	5	2	3	...	35
XVI. Jewellery, timepieces, & platedware ....	46	69	12	14	5	9	155
XVII. Heat, light, and power ....	173	77	25	9	26	13	328
XVIII. Leatherware, n.e.i. ....	21	30	3	4	2	...	60
XIX. Minor wares, n.e.i. ....	58	49	8	14	8	6	143
Total ... ..	4,823	4,873	1,563	1,278	680	605	13,822

2. **Use of Mechanical Power.**—The principal motive power is steam, but the chief towns possess electric power stations owned either by the Government, or by public bodies or private companies. From these many manufactories find it convenient to derive their motive power.

The following table shews the number of factories in which machinery was worked by steam, gas, oil, or electricity, and the horse-power of engines or motors used, in each State and in the Commonwealth, during the year 1910 :—

**UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1910.**

State.	Number of Establishments.			Actual Horse-power of Engines Used.				
	Using Machinery worked by Steam (Gas, Oil, or Electricity)	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.
New South Wales	3,259	1,534	4,823	103,857	10,123	694	15,991	130,665
Victoria	3,132	1,741	4,873	49,013	9,415	1,316	9,629	69,373
Queensland	1,078	485	1,563	29,386	2,928	383	2,046	34,743
South Australia	999	379	1,278	17,667	4,382	1,730	2,882	26,661
Western Australia	496	184	680	21,037	1,248	735	2,954	25,974
Tasmania	340	265	605	7,564	227	81	2,935	10,807
Commonwealth	9,234	4,588	13,822	228,524	28,323	4,939	36,437	298,223

A comparison of the above table with that immediately preceding will explain the preponderance of horse-power employed in the New South Wales factories, this State possessing by far the largest number of industries demanding a considerable amount of power; Victoria, on the other hand, has the largest number of establishments, such as those connected with clothing and textile fabrics, wherein much less mechanical power is utilised.

The number of establishments in the Commonwealth using machinery worked by steam, gas, oil, or electricity was 8706, being 66.81 per cent.; 4588 establishments, representing 33.19 per cent., used no mechanical power. The total average horse-power in use was 298,223, of which engines in which the motive power was steam formed 76.63 per cent.; gas, 9.50 per cent.; oil, 1.65 per cent.; and electricity, 12.22 per cent. During 1910 there were fifty-two more establishments using power than in 1909, the increase in horse-power employed being 21,259, or nearly eight per cent.

### § 3. Numbers Employed in Australian Factories.

1. **Total Number Employed.**—Each person employed in and about a factory, in whatever capacity, is now included as a factory employee, consequently every proprietor who works in his business is counted as an employee, and all "outworkers" (see paragraph 6 hereinafter) are also included. The individuals embraced may be classed under the following heads, viz.:—(i.) Working proprietors; (ii.) managers and overseers; (iii.) accountants and clerks; (iv.) enginedrivers and firemen; (v.) skilled and unskilled workers in the factories, mills, or workshops; (vi.) carters and messengers; and (vii.) others.

(i.) *Average Numbers Employed, 1904 to 1910.* The following table shews, for each year from 1904 to 1910 inclusive, (a) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State; (b) the percentage of the numbers employed in each State on the total numbers employed in the Commonwealth; and (c) the numbers employed per ten thousand of the mean population in each State and the Commonwealth :—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES,  
1904 TO 1910.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
AVERAGE NUMBER.							
1904 ...	68,036	76,287	20,058*	18,049	12,685	8,224	203,339
1905 ...	72,175	80,235	21,705*	19,273	12,733	8,468	214,589
1906 ...	77,822	85,229	23,961	20,153	12,897	8,498	228,560
1907 ...	86,467	90,903	27,954	22,701	12,625	8,209	248,859
1908 ...	89,098	93,808	29,200	24,236	12,425	8,727	257,494
1909 ...	91,702	97,355	29,504	25,709	12,826	9,322	266,418
1910 ...	99,746	102,176	33,944†	27,010	14,107	9,848	286,831
PERCENTAGE ON COMMONWEALTH TOTAL.							
1904 ...	33.44	37.49	9.86*	8.94	6.23	4.04	100.00
1905 ...	33.62	37.37	10.11*	9.03	5.93	3.94	100.00
1906 ...	34.03	37.26	10.47	8.88	5.64	3.72	100.00
1907 ...	34.75	36.53	11.23	9.12	5.07	3.30	100.00
1908 ...	34.60	36.42	11.34	9.42	4.83	3.39	100.00
1909 ...	34.42	36.54	11.08	9.65	4.81	3.50	100.00
1910 ...	34.78	35.62	11.83†	9.42	4.92	3.43	100.00
PER 10,000 OF MEAN POPULATION.							
1904 ...	472	634	384*	500.	542	449	516
1905 ...	491	665	410*	529	516	459	536
1906 ...	517	702	447	549	507	461	563
1907 ...	560	742	515	611	494	444	603
1908 ...	566	756	527	635	482	465	614
1909 ...	574	772	518	656	487	490	623
1910 ...	611	797	574†	673	521	516	656

\* Inclusive of factories with two persons. † Including a number of drapery and tailoring shops making to order of customer; this class of establishment was omitted in Queensland in previous years.

(ii.) *Rates of Increase, 1904 to 1910.* From the preceding table it may be seen that there has been a general increase in the average number of persons employed in manufacturing industries during the period referred to. The following table shews the percentage of increase during each year on the average number for the preceding year:—

**PERCENTAGES OF INCREASE IN AVERAGE NUMBER EMPLOYED, 1904 to 1910.\***

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1903-4 ...	3.66	4.18	4.15	...	7.24	5.64	3.84
1904-5 ...	6.08	5.18	8.21	6.67	0.38	3.61	5.52
1905-6 ...	7.82	6.22	10.38	4.70	1.29	0.45	6.52
1906-7 ...	11.11	6.66	16.67	11.80	— 2.25	— 3.49	8.80
1907-8 ...	3.04	2.75	4.46	6.90	— 1.44	6.31	3.49
1908-9 ...	2.92	3.78	1.04	6.08	3.23	6.82	3.47
1909-10 ...	8.77	4.95	15.05*	5.06	10.00	5.64	

Note. (—) signifies a decrease. \* See note (†) to preceding table.

**2. Classification of Numbers Employed in Factories in the Commonwealth, 1906 to 1910.**—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1906 to 1910 inclusive:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN THE  
COMMONWEALTH, 1906 to 1910.**

Class of Industry.	1906.*	1907.	1908.	1909.	1910.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ....	7,809	8,956	9,042	9,306	9,424
II. Treating oils and fats, animal, vegetable, etc. ....	1,760	1,727	1,735	1,812	1,872
III. Processes in stone, clay, glass, etc. ....	8,779	8,909	9,420	9,605	10,737
IV. Working in wood ....	18,347	19,457	21,310	22,487	24,520
V. Metal works, machinery, etc. ....	43,431	47,060	48,505	49,753	54,238
VI. Connected with food and drink, etc. ....	36,720	40,228	40,652	41,006	42,921
VII. Clothing and textile fabrics, etc. ....	62,594	68,390	70,075	73,567	78,988
VIII. Books, paper, printing and engraving ....	19,565	20,734	21,448	21,943	23,064
IX. Musical instruments, etc. ....	386	430	444	433	553
X. Arms and explosives ....	347	323	339	377	431
XI. Vehicles and fittings, saddlery and harness, etc. ....	9,027	10,288	10,784	11,366	12,484
XII. Ship and boat building and repairing... ..	2,124	2,049	2,278	2,220	2,506
XIII. Furniture, bedding and upholstery ....	5,890	6,819	7,117	7,638	8,434
XIV. Drugs, chemicals and by-products ....	2,600	2,895	3,086	3,391	3,827
XV. Surgical and other scientific instruments ....	178	170	176	173	190
XVI. Jewellery, timepieces, and platedware ....	1,397	1,700	1,771	1,800	1,896
XVII. Heat, light, and power ....	4,834	5,372	5,754	5,986	6,860
XVIII. Leatherware, n.e.i. ....	731	788	893	924	1,097
XIX. Minor wares, n.e.i. ....	2,041	2,564	2,665	2,631	2,783
<b>Total ... ..</b>	<b>228,560</b>	<b>248,859</b>	<b>257,494</b>	<b>266,418</b>	<b>286,861</b>

\* Excluding Queensland Government Railways. For preceding years the Queensland statistics include all establishments where two or more hands were employed except Government Railway workshops.

The total increase in the average number of hands employed from 1906 to 1910 was 58,271, or an annual average of 14,568. The increase was general throughout all the various classes of industry. The greatest development took place in Classes VII. and V., the increases being 16,389 and 10,807 respectively.

**3. Classification of Numbers Employed in each State, according to Class of Industry, 1910.**—The following table shews a similar classification of employees in manufacturing industries in each State for the year 1910:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN EACH  
STATE, 1910.**

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	C'wlth.
I. Treating raw material, product of agricul. and pastoral pursuits, etc. ....	3,986	3,298	796	1,011	217	116	9,424
II. Treating oils and fats, animal, vegetable, etc. ....	765	596	168	261	50	32	1,872
III. Processes in stone, clay, glass, etc. ....	4,882	3,472	517	1,120	509	237	10,737
IV. Working in wood ....	7,423	5,938	3,797	1,716	3,922	1,734	24,520
V. Metal works, machinery, etc. ....	20,703	15,721	5,534	7,854	2,475	1,951	54,238
VI. Connected with food and drink, etc. ....	13,118	13,363	9,792	3,447	1,501	1,700	42,921
VII. Clothing and textile fabrics, etc. ....	24,597	37,173	7,320	5,427	2,577	1,869	78,988
VIII. Books, paper, printing & engraving ....	8,642	8,220	2,547	1,792	1,033	776	23,064
IX. Musical instruments, etc. ....	383	150	...	20	...	...	553
X. Arms and explosives ....	45	386	...	...	...	...	431
XI. Vehicles and fittings, saddlery, and harness, etc. ....	4,055	4,244	1,365	1,728	598	494	12,484
XII. Ship and boat building & repairing ....	1,905	122	189	110	37	55	2,506
XIII. Furniture, bedding and upholstery ....	3,218	2,700	982	893	363	278	8,434
XIV. Drugs, chemicals, and by-products ....	1,342	1,501	68	642	274	...	3,827
XV. Surgical and other scientific instruments ....	87	57	26	7	13	...	190
XVI. Jewellery, timepieces, & platedware ....	658	838	144	157	56	43	1,896
XVII. Heat, light, and power ....	2,516	2,426	481	596	342	508	6,860
XVIII. Leatherware, n.e.i. ....	392	586	70	29	20	...	1,097
XIX. Minor wares, n.e.i. ....	939	1,335	148	200	120	41	2,783
<b>Total ... ..</b>	<b>99,746</b>	<b>102,176</b>	<b>33,944</b>	<b>27,010</b>	<b>14,107</b>	<b>9,848</b>	<b>286,831</b>

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 78,983 employees, or 27.54 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 190 hands, or 0.07 per cent. of the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 4 hereof.)

4. **Classification of Numbers Employed in each State according to Nature of Employment, 1910.**—In the following table the average numbers of persons employed in each State during the year 1910 are classified according to the nature of their employment:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED  
ACCORDING TO NATURE OF EMPLOYMENT, 1910.**

State.	Average Number of Persons Employed.						Total.
	Working Pro- priators.	Managers and Overseers	Account- ants and Clerks.	Engine- drivers and Firemen.	Workers, Skilled & Unskilled in Factory Mill or Workshop	Carters, Messen- gers and Others.	
New South Wales ...	4,057	3,158	3,505	2,578	84,618	1,830	99,746
Victoria ...	4,953	2,877	3,245	1,587	85,680	3,834	102,176
Queensland ...	1,329	1,129	1,405	1,246	26,624	2,211	33,944
South Australia ...	1,321	644	912	505	22,549	1,079	27,010
Western Australia ...	521	513	507	414	10,966	1,186	14,107
Tasmania ...	574	399	359	325	7,807	384	9,848
Commonwealth ...	12,755	8,720	9,933	6,655	238,244	10,524	286,831

5. **Classification of Factories according to Number of Hands Employed, 1910.**—The number of factories in each State classified according to the number of hands employed, and the total number of hands employed in each class of factory, are shewn in the following table:—

**CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS EMPLOYED,  
1910.**

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER OF FACTORIES.							
Under 4 ...	750	703	161	138	116	183	2,051
4 ...	519	584	167	136	58	45	1,509
5 to 10 ...	1,691	1,736	558	507	230	180	4,902
11 to 20 ...	860	883	304	220	132	96	2,495
21 to 50 ...	597	602	215	172	93	64	1,743
51 to 100 ...	238	194	93	61	31	21	638
Over 100 ...	168	171	65	44	20	16	484
Total ...	4,823	4,873	1,563	1,278	680	605	13,822

## CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS—Continued.

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
AVERAGE NUMBER OF HANDS EMPLOYED.							
Under 4 ...	1,755	1,722	376	348	256	359	4,816
4 ...	2,076	2,336	668	544	232	180	6,036
5 to 10 ...	11,777	12,102	3,883	3,547	1,588	1,298	34,195
11 to 20 ....	12,618	12,869	4,352	3,181	1,913	1,367	36,800
21 to 50 ...	18,211	18,801	6,675	5,294	2,903	1,973	53,857
51 to 100 ...	16,471	13,566	6,558	4,359	2,067	1,383	44,404
Over 100 ...	36,838	40,780	11,432	9,737	5,148	3,288	107,223
Total ...	99,746	102,176	33,944	27,010	14,107	9,848	286,831

**6. Outworkers.**—The term “outworker” or “homeworker” has acquired a special meaning in connection with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees' own homes. Individuals working for themselves are not included. The following table gives particulars, so far as available, of the average number of outworkers connected with factories in each State during each year from 1904 to 1910 inclusive :—

## NUMBER OF OUTWORKERS\* CONNECTED WITH FACTORIES, 1904 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1904 ...	374	991	†	†	†	42	†
1905 ...	439	1,186	†	†	†	86	†
1906 ...	501	1,431	†	†	†	57	†
1907 ...	592	1,429	264	66	18	60	2,429
1908 ...	596	1,457	171	74	11	11	2,320
1909 ...	630	1,695	144	65	13	...	2,547
1910 ...	720	1,584	224	68	20	76	2,692

\* In all tables relating to number of hands employed in factories outworkers are included.

† Not available.

Although the figures from 1904 to 1910, for the States of New South Wales and Victoria, shew generally a fairly steady increase in the number of outworkers, they are considerably smaller than the figures for early years. For example, in 1897 there were 2382 outworkers registered in Victoria in the clothing trades, while the number of employees in factories for those trades was 14,293. The corresponding figures for the same year in New South Wales were 546 outworkers and 8602 factory employees. Thus it will be seen that the number of employees in factories has largely increased, while the increase in the number of outworkers has been relatively small.

The Factories Acts in each State contain provisions regulating the employment of outworkers. Generally records of out-work must be kept by factory proprietors, specifying the names and remuneration of workers, and stating the places where the work is done. Further particulars are given in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*

## § 4. Sex Distribution in Factories.

**1. Employment of Females in Factories.**—In all the States the employment of female labour in factories is now regulated by Act of Parliament. In Victoria the first Act dealing with the subject was passed in the year 1873, and provided that no female should be employed for more than eight hours a day without the permission of the Chief

Secretary. The number of working hours for women is now limited to forty-eight per week in all the States except Tasmania, where the maximum number of working hours is ten per day. The maximum periods of continuous labour, and the intervals of cessation therefrom, are also prescribed by the several Acts. Further reference is made to the restrictions regarding the employment of females in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

**2. Distribution of Employees according to Sex, 1906 to 1910.**—In New South Wales the ratio of the number of females employed in factories to the number of males during 1886 was about one to seven; in 1891 one to six; in 1903 it became about one to four; and is now rather lower than one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is about one to two. The employment of women is, however, largely confined to a few trades.

The great prosperity in clothing and textile industries is one of the main causes of increase in female employment. Certain trades are specifically known as women's trades, such as clothing and textile trades, preparation of food, book-binding, and lighter work connected with the drug trade, as for example wrapping. In common with commercial establishments, a considerable number of women are also employed as clerks and typists in factories.

(i.) *Average Number of Males and Females Employed, 1906 to 1910.* The following table shows the average number of male and female employees in factories in each State from 1906 to 1910:—

**AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1906 to 1910.**

State.	1906.	1907.	1908.	1909.	1910.
MALES.					
New South Wales ...	59,979	65,953	67,616	69,184	75,419
Victoria ...	56,339	59,691	60,873	62,822	66,309
Queensland ...	*19,961	23,191	24,639	24,877	†27,165
South Australia ...	16,451	18,423	19,640	20,753	21,864
Western Australia ...	11,015	10,671	10,453	10,703	11,654
Tasmania ...	7,220	6,972	7,334	7,889	8,145
Commonwealth ...	170,965	184,901	190,555	196,228	210,556
FEMALES.					
New South Wales ...	17,843	20,514	21,482	22,518	24,327
Victoria ...	28,890	31,212	32,935	34,538	35,867
Queensland ...	*4,000	4,763	4,561	4,627	†6,779
South Australia ...	3,702	4,278	4,596	4,956	5,146
Western Australia ...	1,882	1,954	1,972	2,123	2,453
Tasmania ...	1,278	1,237	1,393	1,433	1,703
Commonwealth ...	57,595	63,958	66,939	70,190	76,275

\* Estimated. † See Note (†) to § 3. 1 (i).

It will be seen that during the years specified there has been for the whole Commonwealth a total increase in the number of male employees of 39,591, or an annual average of 9898, and in the number of female employees a total increase of 18,680, or an annual average of 4670.

(ii.) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1906 to 1910.* The following table shews the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1906 to 1910 :—

**AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF  
MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1906 to 1910.**

State.	1906.	1907.	1908.	1909.	1910.
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MALES.

New South Wales ...	757	811	816	826	883
Victoria ...	942	991	1000	1012	1045
Queensland ...	680	785	818	801	*843
South Australia ...	886	980	1015	1040	1071
Western Australia ...	742	723	707	712	754
Tasmania ...	762	736	765	810	835
Commonwealth ...	809	863	876	885	929

FEMALES.

New South Wales ...	250	281	288	296	312
Victoria ...	469	501	521	539	554
Queensland ...	165	193	181	178	*252
South Australia ...	204	233	244	257	261
Western Australia ...	178	181	179	188	210
Tasmania ...	143	137	152	154	182
Commonwealth ...	296	323	332	341	363

\* See note (†) to § 3. 1 (i).

**3. Rate of Increase for each Sex.**—The percentages of annual increase during the years 1906 to 1910 in the average number of males and females employed in manufacturing industries in the several States and the Commonwealth are shewn below :—



**PERCENTAGES OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE  
EMPLOYEES, 1906 to 1910.**

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
<b>MALES.</b>					
New South Wales ...	6.89	9.96	2.52	2.32	9.01
Victoria ...	6.45	5.95	1.98	3.20	5.55
Queensland ...	10.25	16.18	6.24	0.97	*9.20
South Australia ...	3.91	11.99	6.61	5.67	5.35
Western Australia ...	-0.69	-3.12	-2.04	2.39	8.89
Tasmania ...	1.62	3.43	5.19	7.57	3.25
Commonwealth ...	6.08	8.15	3.06	2.98	7.30
<b>FEMALES.</b>					
New South Wales ...	11.07	14.97	4.72	4.82	8.04
Victoria ...	5.79	8.04	5.52	4.85	3.86
Queensland ...	11.11	19.08	-4.24	1.45	*46.51
South Australia ...	7.59	15.56	7.43	7.83	3.83
Western Australia ...	14.62	3.83	0.92	7.66	15.54
Tasmania ...	6.24	3.21	12.61	2.87	18.84
Commonwealth ...	7.82	11.05	4.66	4.86	8.67

Note.—(—) indicates decrease. \* See note (†) to § 3. 1. (i).

The above table shews that in each State for the past five years, with a few exceptions, there has been relatively a larger increase in the number of female than in the number of male employees. This matter is referred to further in the following paragraph hereof.

**4. Increasing Ratio of Female Employment in Factories.**—The increasing extent to which females are employed in the factories of the Commonwealth may perhaps be best shewn by giving the number of females to every 100 male employees for each State for each year from 1904 to 1910 inclusive:—

**NUMBER OF FEMALES PER 100 MALES IN AUSTRALIAN FACTORIES, 1904 to 1910.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1904	27.27	50.90	*19.89	26.07	14.51	19.53	32.78
1905	28.63	51.60	*19.89	22.35	14.80	19.46	33.15
1906	29.75	51.28	*20.04	23.31	17.09	17.68	33.69
1907	31.10	52.29	20.53	23.22	18.19	17.74	34.58
1908	31.77	54.10	18.51	23.36	18.86	18.99	35.12
1909	32.55	54.97	18.60	23.88	19.74	18.16	35.76
1910	32.26	54.09	†24.95	23.54	21.05	20.91	36.23

\* Estimated. † See note (†) to § 3. 1. (i).

Although this table shews that from 1904 to 1910 there has been an increase in the percentage specified from 32.78 to 36.23, the tables given in the next succeeding paragraph shew that this increase has not been due so much to the incursion of female labour into what may be termed men's trades, as to the activity in those trades in which women are ordinarily engaged, more especially in dressmaking, millinery, etc.

5. **Employment of Females in Particular Industries, 1910.**—The employment of women in manufacturing industries in Australia is largely confined to a few trades, of which the more important are comprised in Classes VI., VII., and VIII., viz., in connection with food, drink, etc., clothing and textile fabrics, and books, paper, printing, etc. The following table shews the average number of females employed in each of these classes during the year 1910 in each State, and also shews the percentages of the average number so employed on the total average number of females employed in all classes of factories :—

**AVERAGE NUMBER OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES, AND  
PERCENTAGES ON AVERAGE TOTAL EMPLOYED. 1910.**

Class.	N.S.W.	Vict.	Q'land.	S. Aust.	W.Aust.	Tas.	Cwlth.
AVERAGE NUMBER.							
VI. Food, drink, etc. ...	2,988	3,637	546	467	143	307	8,088
VII. Clothing and textile fabrics ...	17,272	27,878	5,459	3,998	2,030	1,232	57,869
VIII. Books, paper, printing, etc. ...	2,118	2,167	465	487	177	93	5,507
All other classes ...	1,949	2,185	309	194	103	71	4,811
Total ...	24,327	35,867	6,779	5,146	2,453	1,703	76,275

**PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.**

VI. Food, drink, etc. ...	12.28	10.14	8.05	9.08	5.83	18.03	10.60
VII. Clothing and textile fabrics ...	71.00	77.73	80.53	77.69	82.75	72.34	75.87
VIII. Books, paper, printing, etc. ...	8.71	6.04	6.86	9.46	7.22	5.46	7.22
All other classes ...	8.01	6.09	4.56	3.77	4.20	4.17	6.31
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It will be seen that by far the greater part of the total number of females employed in factories work in one or other of the three classes of industry indicated, Class VII. being the most important. The classification of the employment of females in the several industries in that class, and the ratio they bore to males so employed, is shewn in the following table :—

## FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII. DURING 1910.

Industry.	New South Wales.			Victoria.			Other States.		
	Males.	Femls.	Femls. Per 100 Males.	Males.	Femls.	Femls. Per 100 Males.	Males.	Femls.	Femls. Per 100 Males.
Woollen & tweed mills	319	429	134	736	921	125	254	371	146
Boots and shoes ...	2,866	1,609	56	4,344	2,488	57	1,676	827	49
Slop clothing	3,017	7,622	253	2,192	7,250	331	1,984	5,386	271
Clothing (tailoring)									
Dressmaking & millin'y	78	4,772	6,118	248	9,149	3,689	59	3,734	6,329
Dyeworks and cleaning	34	27	79	56	75	134	26	21	81
Furriers ...	19	21	111	30	78	260	8	11	138
Hats and caps ...	454	944	208	720	1,170	163	115	203	177
Waterproof and oilskin	19	77	405	46	150	326	...	...	...
Shirts, ties, and scarfs	134	1,529	1,141	319	6,084	1,907	132	2,010	1,523
Rope and cordage ...	212	3	1	502	351	70	132	81	61
Tents and tarpaulins...	173	239	138	93	49	53	108	75	69
Other ...	...	...	...	9	113	1,256	...	...	...
Total Class VII....	7,325	17,272	236	9,295	27,878	300	4,494	12,719	283

## § 5. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of the Commonwealth is regulated by Acts of Parliament in a similar manner to the employment of female labour. Excepting under special circumstances, children under a certain age may not be employed in factories. The minimum age in New South Wales, Queensland, and Western Australia is fourteen, and in the other States thirteen years. Other restrictions on the employment of young persons in factories are more particularly referred to in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*) The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education, and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed in Factories, 1906 to 1910.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age, excepting in New South Wales, where it denoted, for years prior to 1907, any person under fifteen. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the years 1906 to 1910. It will be seen that the Commonwealth figures for years prior to 1907 are incomplete. During the period under review, there was an increase in the average number employed in every State, with the exception of Victoria, where there was a decrease of 1283.

## AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
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## MALES.

New South Wales ...	881	2,406	2,475	2,433	2,452
Victoria ...	3,213	3,253	3,049	2,817	2,753
Queensland ...	*	1,119	1,034	1,001	†1,031
South Australia ...	1,166	1,127	1,179	1,094	1,082
Western Australia ...	203	216	289	289	340
Tasmania ...	251	214	239	257	281
Commonwealth ...	†5,714	8,335	8,265	7,891	7,939

## FEMALES.

New South Wales ...	579	1,880	1,859	1,973	2,025
Victoria ...	2,997	3,095	3,065	2,496	2,174
Queensland ...	*	576	583	556	†733
South Australia ...	400	480	568	577	702
Western Australia ...	126	159	251	242	266
Tasmania ...	99	97	135	128	96
Commonwealth ...	†4,201	6,287	6,461	5,972	5,996

## TOTAL.

New South Wales ...	1,460	4,286	4,334	4,406	4,477
Victoria ...	6,210	6,348	6,114	5,313	4,927
Queensland ...	*	1,695	1,617	1,557	†1,764
South Australia ...	1,566	1,607	1,747	1,671	1,784
Western Australia ...	329	375	540	531	606
Tasmania ...	350	311	374	385	377
Commonwealth ...	†9,915	14,622	14,726	13,863	13,935

\* Not available. † Incomplete. ‡ See Note (†) to § 3. 1 (i).

The relatively large increase in the figures for the Commonwealth for the year 1907 is accounted for largely by the fact that in New South Wales, the term "child" denoted any person under the age of fifteen years, which, in 1907, was raised to sixteen years in order to come into line with the other States of the Commonwealth. It should be noted also that the Commonwealth figures for the year 1906 are exclusive of returns for Queensland.

**3. Industries Employing Child Labour, 1910.**—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shows the average number of children of each sex employed in the several industries indicated in each State during the year 1910:—

## NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1910.

Class.	Industry.	N.S.W.		Victoria.		Q'land.		S. Aust.		W.A.		Tas.		C'w'lt'h.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery and earthenware ...	63	9	62	4	19	...	28	2	17	...	7	...	196	15
IV.	Joinery, boxes, cases, etc. ...	88	...	62	...	28	2	50	2	10	...	10	...	248	4
V.	Engin'ring, ironworks, and foundries ...	216	4	202	...	33	...	95	...	53	...	20	...	619	4
"	Galvanised iron-working and tinsmithing ...	96	3	81	19	54	...	71	...	...	...	4	...	306	22
"	Railway carriages, railway & tramway work-shops ...	61	...	50	...	23	...	30	...	14	...	1	...	179	...
VI.	Biscuits, cakes, etc. ...	133	104	93	23	28	12	8	6	9	12	9	...	280	157
"	Confectionery ...	38	68	22	44	24	21	27	24	...	8	...	...	111	165
"	Jams, pickles, sauces, etc. ...	31	26	34	50	19	...	33	41	3	4	22	12	142	133
"	Aerated waters, cordials, etc. ...	40	4	51	...	49	2	16	...	10	...	5	...	171	6
"	Tobacco, cigars, etc. ...	53	70	21	12	...	...	1	4	1	4	...	...	76	90
VII.	Boots and shoes ...	151	159	209	245	61	45	65	56	5	8	5	11	496	534
"	Clothing (tailoring and slop) ...	97	500	106	384	58	229	20	170	12	57	16	19	309	1,359
"	Dressmaking and millinery ...	1	409	9	521	2	150	1	98	...	100	...	42	13	1,320
"	Hats and caps ...	24	63	50	63	2	15	6	15	...	...	...	...	82	156
"	Shirts, ties, scarfs, etc. ...	4	114	2	361	12	107	2	124	...	32	...	...	20	738
"	Woollen, tweed, and cotton mills ...	12	35	112	106	14	39	5	29	...	...	3	6	146	215
VIII.	Electrotyping, printing and binding ...	413	186	483	102	182	52	73	23	63	20	48	1	1,262	390
"	Paper making, paper boxes, etc. ...	32	91	22	43	2	26	20	68	...	4	...	...	76	232
XI.	Coach & wagon building, etc. ...	79	...	116	...	43	...	45	...	15	...	18	...	316	...
XII.	Billiard tables, cabinet making and furniture ...	43	4	65	...	48	5	35	...	11	...	20	...	222	9

4. **Apprenticeship.**—The apprenticeship systems of the several States may be summarised as follows :—

In New South Wales, no child may be apprenticed until the attainment of the age of fourteen years, in Victoria and Queensland, twelve years. There is no limitation in the case of the other States, nor any regulating Acts except as applying to charity apprentices. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, so also may those directing that education be continued up to a certain age or standard.

Indentures must be entered into specifying the conditions of the employment. Apprenticeships may not exceed seven years in duration, and become inoperative at twenty-one years of age, or in the case of women, on marriage.

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory. No general statistics of the number of apprentices in Australia have been collected up to the present time. Other enactments relating to child labour are referred to in Section XXVII. of this book, *Industrial Unionism and Industrial Legislation*.

## 6. Amount of Wages Paid and Value of Production.

1. **Introduction.**—The importance of the manufacturing industries of the Commonwealth is indicated by the fact that the total value of the output for 1910 was £120,770,674, of which amount the sum of £72,722,642 represents the value of the raw

materials used. The difference between these two amounts, viz., £48,048,032, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories during 1910 was £23,874,959.

2. **Amount of Salaries and Wages Paid, 1910.**—The total amount of salaries and wages paid during the year 1910 in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) is shewn in the following table.

It has been found impracticable to shew satisfactorily in this book the rates of wages paid to employees in various classes of manufacturing industries in Australia, owing to the facts—firstly, that the rates in many industries vary very considerably in different parts of the country; and secondly, that the necessary particulars are not collected by the several States on a uniform basis; while for some of the States the information given is meagre and unsatisfactory.

**AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN COMMONWEALTH,  
1910.\***

Class of Industry.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ....	323,544	254,246	73,511	72,120	21,551	8,974	753,946
II. Treating oils and fats, animal, vegetable, etc. ....	60,409	56,440	16,199	22,674	3,862	2,902	162,486
III. Processes in stone, clay, glass, etc. ....	453,537	326,306	42,206	94,119	49,491	17,802	983,460
IV. Working in wood ...	630,216	537,195	327,357	158,912	585,841	130,180	2,379,701
V. Metal works, machinery, etc.	2,378,610	1,561,502	533,896	847,653	321,540	229,716	5,872,917
VI. Connected with food and drink, etc. ....	1,158,523	1,116,879	634,787	295,499	179,735	96,309	3,681,732
VII. Clothing and textile fabrics, etc. ....	1,397,639	1,799,889	356,880	281,399	169,618	88,417	4,093,842
VIII. Books, paper, printing and engraving ...	807,754	736,813	352,249	164,932	160,021	76,110	2,297,879
IX. Musical instruments, etc. ....	40,337	14,908	...	1,713	...	...	56,958
X. Arms and explosives ...	2,080	24,456	...	...	...	...	26,536
XI. Vehicles and fittings, saddlery and harness, etc. ....	346,991	299,996	102,737	139,213	64,142	30,960	984,039
XII. Ship and boat building and repairing... ..	222,101	12,260	9,812	14,473	3,611	3,893	266,080
XIII. Furniture, bedding and upholstery ...	284,865	220,464	79,286	77,691	39,487	17,690	719,483
XIV. Drugs, chemicals, and by-products ...	103,721	125,878	4,269	53,247	9,896	...	297,011
XV. Surgical and other scientific instruments ...	6,991	4,569	2,654	911	701	...	15,826
XVI. Jewellery, timepieces, and platedware ...	58,769	75,471	10,247	17,207	6,185	2,987	170,866
XVII. Heat, light, and power ...	326,860	292,112	62,971	68,390	58,433	36,459	845,225
XVIII. Leatherware, n.e.i. ....	26,857	35,606	4,067	1,709	1,931	...	70,160
XIX. Minor wares, n.e.i....	61,582	105,942	7,587	11,606	7,612	2,483	196,812
Total ... ..	8,691,386	7,600,932	2,830,704	2,323,398	1,683,657	744,882	23,874,959

\* Excluding all amounts drawn by working proprietors.

The maximum amount of salaries and wages paid in any particular class was in Class V., the amount being £5,872,917, or 24.60 per cent. on the total amount; the minimum amount was in Class XV., £15,826, or 0.07 per cent. on the total amount. The State in which the largest amount was paid was New South Wales. The following statement shews the total amount of salaries and wages paid, and the average amount paid per employee in each State during each of the years 1906 to 1910; the figures are exclusive of the amounts drawn from the business by working proprietors:—

**AMOUNT OF SALARIES AND WAGES PAID AND AVERAGE AMOUNT PER ANNUM  
PAID PER EMPLOYEE, 1906 to 1910.**

Year.	Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
		£	£	£	£	£	£	£
1906	Total amount paid ...	5,591,888	5,468,470	•	•	1,531,117	615,684	113,207,159
	Average per employee	75.05	67.69	•	•	123.91	75.87	175.14
1907	Total amount paid ...	6,650,715	5,982,677	1,923,639	1,734,394	1,380,708	651,844	18,323,977
	Average per employee	80.63	69.33	72.09	80.03	114.11	84.07	77.32
1908	Total amount paid ...	7,218,556	6,380,206	2,192,015	1,924,974	1,474,934	693,592	19,884,367
	Average per employee	84.72	71.59	78.28	83.55	123.56	84.31	80.99
1909	Total amount paid ...	7,665,135	6,807,851	2,324,005	2,028,691	1,506,360	773,424	21,106,456
	Average per employee	87.27	73.57	82.09	83.08	122.08	87.78	83.01
1910	Total amount paid ...	8,691,386	7,600,932	2,830,704	2,323,398	1,683,657	744,882	23,874,959
	Average per employee	90.83	78.18	86.79	90.44	123.93	80.32	87.11

\* Information not available.

† Exclusive of Queensland and South Australia.

In comparing the figures in the above table regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others (see § 2 hereof). In Victoria, for instance, where the average is lowest, there are a large number of factories and hands employed in Class VII., and in that class wages are low, a great many women and children being employed. The position occupied by Western Australia is no doubt partly due to the higher cost of living in that State.

It will be noted that—except in Western Australia—there has been a persistent increase in the average wage paid per employee in each of the States during the period under review, despite the tendency of the number of females employed in certain industries to increase at a higher ratio than males. Taking the Commonwealth as a whole, during the period 1907-10 there has been an increase of 30 per cent. on the total amount of wages paid and 12.67 per cent. on the average paid per employee.

The following table shews the approximate amount paid in salaries and wages to males and females in New South Wales and Victorian factories during 1909 and 1910. Similar information for the other States is not available :—

**APPROXIMATE AMOUNT OF SALARIES AND WAGES PAID TO MALES AND FEMALES  
IN FACTORIES IN NEW SOUTH WALES AND VICTORIA, 1909 and 1910.**

Particulars.	New South Wales.		Victoria.	
	Males.	Females.	Males.	Females.
1909. Amount paid... ..	£ 6,823,732	841,393	5,607,703	1,200,148
Per cent. on total ... ..	89.02	10.98	82.37	17.63
Average amount per employee ...	£ 103.96	37.91	95.61	35.41
1910. Amount paid... ..	£ 7,728,689	962,697	6,273,921	1,827,011
Per cent. on total ... ..	88.92	11.08	82.54	17.46
Average amount per employee ...	£ 107.84	40.08	101.20	37.67

**3. Value of Fuel and Light used in Factories, 1910.**—The amount expended in factories on fuel and light is of considerable importance; in 1910 it amounted to £2,634,831, being an increase on the previous year's figures of £407,326. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £863,485; Class VI., Connected with Food, Drink, etc., £594,306; Class XVII., Heat, Light, Power, etc., £403,441, of which amount £329,750 was expended on generating

electric light and power; and Class III., £317,133, of which £249,755 was represented in brick and pottery works, etc., and glass factories. The following tables shew the value of fuel and light used in the different classes of industry in the several States of the Commonwealth during 1910, and of the total used for the four years ended 1910 as far as the figures are available:—

#### VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1910.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwltth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ....	45,955	30,152	8,699	9,563	1,594	2,657	98,620
II. Treating oils and fats, animal, vegetable, etc. ....	13,839	14,601	1,834	6,383	313	50	37,020
III. Processes in stone, clay, glass, etc. ....	147,768	99,906	6,195	41,215	17,479	4,570	317,133
IV. Working in wood ....	10,246	10,651	6,600	4,315	1,334	350	33,496
V. Metal wks., machinery, etc. ....	453,422	120,202	35,895	150,787	18,607	84,482	863,485
VI. Connected with food and drink, etc. ....	185,546	185,517	129,482	54,618	29,438	9,705	594,306
VII. Clothing and textile fabrics, etc. ....	24,362	54,318	5,403	7,853	3,154	1,843	96,933
VIII. Books, paper, printing, and engraving ....	23,549	33,995	9,090	6,606	4,510	947	78,697
IX. Musical instruments, etc. ....	502	173	...	22	...	...	697
X. Arms and explosives ....	35	1,309	...	...	...	...	1,344
XI. Vehicles and fittings, saddlery and harness, etc. ....	9,287	10,979	1,026	4,602	2,458	675	29,027
XII. Ship and boat building and repairing ....	10,487	710	133	281	75	24	11,710
XIII. Furniture, bedding, and upholstery ....	4,171	4,825	1,824	2,237	863	457	14,377
XIV. Drugs, chemicals, and by-products ....	15,540	11,557	312	7,178	1,639	...	36,226
XV. Surgical and other scientific instruments ....	164	128	73	18	65	...	448
XVI. Jewellery, timepieces, and plated ware ....	1,409	2,302	355	500	202	38	4,806
XVII. Heat, light, and power ....	234,970	48,471	9,780	17,220	68,348	24,652	403,441
XVIII. Leatherware, n.e.i. ....	615	1,015	76	23	48	...	1,777
XIX. Minor wares, n.e.i. ....	2,415	8,324	113	310	94	32	11,288
Total ...	1,184,282	639,135	216,890	313,731	150,311	130,482	2,634,831

#### VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1907 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	843,686	498,454	208,775	281,532	*	*	*
1908 ...	876,565	538,571	196,908	307,883	141,349	*	*
1909 ...	940,840	566,768	194,776	269,646	140,111	115,364	2,227,505
1910 ...	1,184,282	639,135	216,890	313,731	150,311	130,482	2,634,831

\* Figures not available.

4. Value of Raw Materials used in Factories, 1910.—The total value of raw materials worked up (*i.e.*, exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1910 was £72,722,642, which represents 60.22 per cent. of the total value of the finished products. (See next paragraph hereof.) The following table shows the value of the raw materials worked up in various factories in each State during the year 1910:—



## VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH, 1910.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	3,959,481	2,005,365	1,342,883	423,741	192,505	50,122	7,974,097
II. Treating oils and fats, animal, vegetable, etc. ...	625,432	395,399	71,404	117,592	59,348	11,000	1,280,175
III. Processes in stone, clay, glass, etc. ...	226,084	153,343	7,417	32,555	12,410	5,086	436,895
IV. Working in wood ...	1,441,719	829,773	504,385	668,022	55,271	16,893	3,516,063
V. Metal wks., machinery, etc. ...	6,066,309	2,105,398	837,164	1,723,490	269,873	597,513	11,599,747
VI. Connected with food and drink, etc. ...	13,455,491	9,658,390	5,628,437	2,450,076	668,988	496,276	32,357,658
VII. Clothing and textile fabrics, etc. ...	2,446,561	3,677,769	686,716	509,634	255,363	108,530	7,684,573
VIII. Books, paper, printing, and engraving ...	712,785	740,164	122,687	150,401	86,918	22,046	1,835,001
IX. Musical instruments, etc. ...	71,443	6,361	...	1,370	...	...	79,174
X. Arms and explosives ...	4,819	60,850	...	...	...	...	65,669
XI. Vehicles and fittings, saddlery and harness, etc. ...	420,608	361,263	108,920	190,262	72,327	34,742	1,188,122
XII. Ship and boat building and repairing ...	123,400	9,961	7,184	9,038	5,755	2,448	157,786
XIII. Furniture, bedding, and upholstery ...	422,805	383,073	85,737	77,732	54,510	20,072	1,043,929
XIV. Drugs, chemicals, and by-products ...	442,755	585,885	8,325	247,310	35,019	...	1,319,294
XV. Surgical and other scientific instruments ...	6,918	3,459	2,219	700	70	...	13,366
XVI. Jewellery, timepieces, and platedware ...	87,294	142,397	15,651	19,550	12,827	1,350	279,069
XVII. Heat, light, and power ...	621,502	259,572	26,552	53,876	17,998	15,256	994,756
XVIII. Leatherware, n.e.i. ...	106,250	155,611	11,359	4,821	2,670	...	280,711
XIX. Minor wares, n.e.i. ...	174,923	407,222	9,779	15,085	8,107	1,441	616,557
Total ...	31,416,579	21,941,255	9,476,819	6,695,255	1,809,959	1,382,775	72,722,642

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £32,357,658. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £11,599,747 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £13,366. The year 1910 is the first for which reliable and complete returns have been collected in every State relating to the value of raw materials worked up in factories; the following table, however, gives particulars for the four years ended 1910, so far as information is available:—

## VALUE OF RAW MATERIAL WORKED UP IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1907 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	22,746,162	17,926,128	6,490,086	5,379,636	*	†	‡
1908 ...	25,507,414	18,662,070	6,946,550	6,690,976	1,592,216	†	†
1909 ...	27,314,486	19,706,530	7,658,195	6,004,459	1,529,211	‡2,980,359	65,193,240
1910 ...	31,416,579	21,941,255	9,476,819	6,695,255	1,809,959	1,382,775	72,722,642

\* Details too incomplete for publication. † Figures not available. ‡ 1909 being the first year in which an attempt was made to collect this information in Tasmania, the returns cannot be accepted as being reliable and are probably overstated.

5. Total Value of Output of Manufacturing Industries, 1910.—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State during the year 1910 is shewn in the following table. The figures given represent not only the increased value due to the process of manufacture, but also

include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 6 hereof) is the real value of production from manufactories.

### TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH, 1910.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lt'h.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	4,688,061	2,549,910	1,719,840	556,115	235,814	71,640	9,821,380
II. Treating oils and fats, animal, vegetable, etc.	886,027	565,989	110,885	192,512	72,118	17,000	1,944,531
III. Processes in stone, clay, glass, etc.	1,186,274	784,791	89,390	211,160	109,058	38,634	2,419,307
IV. Working in wood	2,468,452	1,698,773	1,005,058	955,138	794,157	215,967	7,927,545
V. Metal works, machinery, etc.	10,751,443	4,635,569	1,634,599	3,247,118	665,910	1,307,691	22,242,330
VI. Connected with food and drink, etc.	16,956,241	12,645,057	8,382,031	3,313,026	1,184,168	757,776	43,238,299
VII. Clothing and textile fabrics, etc.	4,671,647	6,616,909	1,301,018	958,420	487,734	232,145	14,267,873
VIII. Books, paper, printing, and engraving	2,076,433	2,184,356	602,203	391,478	346,702	102,522	5,703,694
IX. Musical instruments, etc.	139,505	23,416	...	5,400	...	...	168,321
X. Arms and explosives	7,500	122,066	...	...	...	...	129,566
XI. Vehicles and fittings, saddlery and harness, etc.	968,173	842,054	297,107	437,605	160,383	78,568	2,783,890
XII. Ship and boat building and repairing	402,363	34,184	21,493	27,342	11,563	7,905	504,850
XIII. Furniture, bedding, and upholstery	857,946	724,104	217,336	193,209	106,834	49,502	2,148,931
XIV. Drugs, chemicals, and by-products	533,161	1,009,201	20,907	365,470	61,218	...	2,289,957
XV. Surgical and other scientific instruments	24,444	11,855	7,938	2,200	1,344	...	47,781
XVI. Jewellery, timepieces, and platedware	190,310	291,817	29,748	49,977	22,679	5,481	590,012
XVII. Heat, light, and power	2,056,192	1,077,378	225,561	237,374	249,500	94,446	3,940,451
XVIII. Leatherware, n.e.i.	161,518	223,256	16,729	8,708	5,434	...	415,645
XIX. Minor wares, n.e.i.	289,953	620,169	20,266	32,443	18,995	4,485	986,311
Total ...	49,615,643	36,660,854	15,792,109	11,184,695	4,533,611	2,983,762	120,770,674

It may be seen that the State of New South Wales far outstrips the other States in the total value of the output of her factories, the value being £49,615,643, or 41.08 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 30.36 per cent.; the value of the output of Queensland was 13.08 per cent.; of South Australia 9.26 per cent.; of Western Australia 3.75 per cent.; and of Tasmania 2.47 per cent. The two most important classes in order of value of output (Classes VI. and V.) are the same as in order of value of raw materials used. As regards output the next class is Class VII., and as regards raw materials used Class I. The following statement shews the value of output of factories in each State during the four years ended 1910 so far as particulars are available:—

### TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1907 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	37,231,012	29,693,634	11,209,515	8,923,004	*	†	†
1908 ...	40,163,826	30,787,760	11,182,009	10,471,671	4,056,365	†	†
1909 ...	42,960,689	32,898,235	12,823,695	9,928,105	4,008,604	14,790,405	107,409,733
1910 ...	49,615,643	36,660,854	15,792,109	11,184,695	4,533,611	2,983,762	120,770,674

PER HEAD OF MEAN POPULATION.							
Year	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
1907 ...	24.12	24.23	20.65	24.02	*	†	†
1908 ...	25.53	24.82	20.60	27.44	15.73	†	†
1909 ...	26.88	26.09	23.16	25.33	15.23	25.18	25.13
1910 ...	30.38	28.59	26.69	27.88	16.73	15.62	27.64

\* Details too incomplete for publication. † Figures not available.

‡ See note (1) to last table § 6, 4.

6. **Value of Production of Manufacturing Industries, 1910.**—The difference between the figures given in paragraph 5 and the corresponding figures in paragraph 4 hereof represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production of manufacturing industries. The following table shews the value added in this manner in each State during the year 1910 for the various classes of factories:—

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMON-WEALTH, 1910.**

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Cwealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	728,580	544,545	376,957	132,374	43,309	21,518	1,847,283
II. Treating oils and fats, animal, vegetable, etc. ...	260,595	170,590	39,481	74,920	12,770	6,000	564,356
III. Processes in stone, clay, glass, etc. ...	960,190	631,448	81,973	178,605	96,648	33,548	1,982,412
IV. Working in wood ...	1,026,733	869,000	590,673	287,116	738,886	199,074	3,711,482
V. Metal works, machinery, etc. ...	4,685,134	2,530,171	797,435	1,523,028	396,037	710,176	10,642,583
VI. Connected with food and drink, etc. ...	3,500,750	2,986,667	2,753,594	862,950	515,180	261,500	10,880,641
VII. Clothing and textile fabrics, etc. ...	2,225,086	2,939,140	614,302	448,786	232,371	123,615	6,583,300
VIII. Books, paper, printing, and engraving ...	1,363,648	1,444,192	479,516	241,077	259,784	80,476	3,868,693
IX. Musical instruments, etc. ...	68,062	17,055	...	4,030	...	...	89,147
X. Arms and explosives ...	2,681	61,216	...	...	...	...	63,897
XI. Vehicles and fittings, saddlery and harness, etc. ...	547,565	430,791	188,187	247,343	88,056	43,826	1,595,768
XII. Ship and boat building and repairing ...	278,963	21,223	14,309	18,304	5,808	5,457	347,064
XIII. Furniture, bedding, and upholstery ...	435,141	341,031	131,599	115,477	52,324	29,430	1,105,002
XIV. Drugs, chemicals, and by-products ...	390,406	423,316	12,582	118,160	26,199	...	970,663
XV. Surgical and other scientific instruments ...	17,526	8,396	5,719	1,500	1,274	...	34,415
XVI. Jewellery, timepieces, and plated ware ...	103,016	149,420	14,097	30,427	9,852	4,131	310,943
XVII. Heat, light, and power ...	1,434,690	817,806	199,009	183,498	231,502	79,190	2,945,695
XVIII. Leatherware, n.e.i. ...	55,268	67,645	5,370	3,887	2,764	...	134,934
XIX. Minor wares, n.e.i. ...	115,030	212,947	10,487	17,358	10,888	3,044	369,754
Total ...	18,199,064	14,719,599	6,315,290	1,489,440	2,723,652	1,600,987	48,048,032

It may be seen that the amount of the value added in each State is in the same order as in the case of value of output. The value added to raw material by process of manufacture and amount per head of mean population is shewn in the following statement for the years 1907 to 1910:—

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN THE COMMON-WEALTH, 1907 to 1910.**

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tas.	C'wealth.
VALUE.							
1907 ...	£ 14,484,850	£ 11,767,506	£ 4,719,429	£ 3,543,368	£ *	£ †	£ †
1908 ...	14,656,412	12,125,690	4,235,459	3,780,695	2,464,149	†	†
1909 ...	15,646,203	13,191,705	5,165,500	3,923,646	2,479,393	£ 1,810,046	£ 42,216,498
1910 ...	18,199,064	14,719,599	6,315,290	4,489,440	2,723,652	1,600,987	48,048,032
PER HEAD OF MEAN POPULATION.							
1907 ...	9.38	9.60	8.70	9.54	*	†	†
1908 ...	9.32	9.77	7.80	9.91	9.56	†	†
1909 ...	9.79	10.46	9.33	10.01	9.42	9.52	9.88
1910 ...	11.14	11.48	10.68	11.19	10.05	8.38	9.94

\* Details too incomplete for publication. † Figures not available. ‡ See note (1) to last table § 6, 4.

It may thus be seen that in 1910 the positions of the two leading States, New South Wales and Victoria, as also those of Queensland and Western Australia, in regard to total value of output of factories per head of mean population, are all different in regard to value added per head. The other two States retain their relative positions.

As the total value of the output for the Commonwealth was estimated at £120,770,674, there remained, after payment of £72,722,642, the value of the raw materials used, of £23,874,959 for salaries and wages, and of £2,634,831 for fuel, the sum of £21,538,242 to provide for all other expenditure and profits. The following table gives corresponding particulars for each State, expressed absolutely and as percentages of the total value of the output:—

**VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH FACTORIES,  
1910.**

State.	Raw Materials Used.	Fuel and Light.	Salaries and Wages.	All other Expenditure Interest, and Profits.	Total Value of Output.
VALUE AND COST, ETC.					
	£	£	£	£	£
New South Wales ...	31,416,579	1,184,282	8,691,386	8,323,396	49,615,643
Victoria ...	21,941,255	639,135	7,600,932	6,479,532	36,660,854
Queensland ...	9,476,819	216,890	2,830,704	3,267,696	15,792,109
South Australia ...	6,695,255	313,731	2,323,398	1,852,311	11,184,695
Western Australia ...	1,809,959	150,311	1,683,657	889,684	4,533,611
Tasmania ...	1,382,775	130,482	744,882	725,623	2,983,762
Commonwealth ...	72,722,642	2,634,831	23,874,959	21,538,242	120,770,674

PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.

	%	%	%	%	%
New South Wales ...	63.32	2.39	17.52	16.77	100.00
Victoria ...	59.85	1.74	20.73	17.68	100.00
Queensland ...	60.01	1.37	17.93	20.69	100.00
South Australia ...	59.86	2.81	20.77	16.56	100.00
Western Australia ...	39.92	3.32	37.14	19.62	100.00
Tasmania ...	46.35	4.37	24.96	24.32	100.00
Commonwealth ...	60.22	2.18	19.77	17.83	100.00

## § 7. Land, Buildings, Plant and Machinery.

1. **General.**—As an indication of the permanent character and stability of the industries which have been established in the Commonwealth, it may be noted that the values of land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole Commonwealth the total value of land and buildings and plant and machinery has increased from 1906 to 1910 by £11,637,850, i.e., from £46,824,489 to £58,462,339, or at the rate of £2,909,463 per annum.

The following statement shews for the year 1910 the values of land and buildings and of plant and machinery used in connection with manufacturing industries in each State:—

**VALUE OF LAND, BUILDINGS, PLANT AND MACHINERY, IN CONNECTION WITH  
MANUFACTURING INDUSTRIES, 1910.**

Value of—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	O'with.
	£	£	£	£	£	£	£
Land and buildings ...	12,108,776	9,012,263	3,045,974	2,648,658	1,674,953	1,021,015	29,511,639
Plant and machinery ...	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,020,156	28,950,700
<b>Total</b> ...	<b>23,687,396</b>	<b>16,613,348</b>	<b>7,677,493</b>	<b>4,874,376</b>	<b>3,568,555</b>	<b>2,041,171</b>	<b>58,462,339</b>

It may be seen from the above table that the total capital invested in land, buildings, plant, and machinery in manufacturing industries in the Commonwealth during the year 1910 was approximately £58,462,339 (or £13.38 per head of mean population); of that sum £29,511,639 was invested in land and buildings occupied as manufactories, the remaining £28,950,700 being the value of the plant and machinery used in connection therewith.

**2. Value of Land and Buildings.**—The value of the land and buildings occupied in connection with manufacturing industries may be conveniently classified according to the nature of the industry conducted therein.

(i.) *Total Value in Commonwealth, 1906 to 1910.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connection with manufacturing industries of various classes during each year from 1906 to 1910 inclusive:—

**VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH,  
1906 to 1910.**

Class of Industry.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	777,871	781,733	847,113	869,488	920,685
II. Treating oils & fats, animal, vegetable, etc. ...	363,622	343,424	359,624	370,681	394,079
III. Processes in stone, clay, glass, etc. ...	728,995	820,332	937,753	956,733	1,073,612
IV. Working in wood ...	1,219,155	1,090,551	1,195,581	1,288,267	1,492,673
V. Metal works, machinery, etc. ...	3,313,200	3,709,314	4,378,755	4,415,525	4,554,698
VI. Connected with food and drink, etc. ...	6,638,474	6,708,611	7,211,845	7,191,976	7,399,625
VII. Clothing and textile fabrics, etc. ...	2,919,301	3,396,599	3,377,905	3,809,148	4,191,488
VIII. Books, paper, printing, and engraving ...	2,134,021	2,357,799	2,483,693	2,642,029	2,779,754
IX. Musical instruments, etc. ...	27,741	27,405	31,054	33,314	75,632
X. Arms and explosives ...	30,314	31,152	34,586	33,016	38,763
XI. Vehicles & fittings, saddlery & harness, etc. ...	951,288	1,079,859	1,172,556	1,186,750	1,325,152
XII. Ship and boat building and repairing ...	1,111,752	991,907	988,141	1,033,513	1,052,868
XIII. Furniture, bedding, and upholstery ...	618,422	633,237	666,289	697,273	764,170
XIV. Drugs, chemicals, and by-products ...	335,393	444,060	531,765	543,507	687,162
XV. Surgical and other scientific instruments ...	37,197	31,779	33,054	56,378	56,149
XVI. Jewellery, timepieces, and platedware ...	159,356	204,734	226,352	232,483	271,834
XVII. Heat, light, and power ...	1,510,520	1,855,438	1,923,734	2,026,611	2,112,220
XVIII. Leatherware, n.e.i. ...	60,365	57,043	91,036	83,578	100,096
XIX. Minor wares, n.e.i. ...	143,204	193,797	218,540	210,325	220,984
<b>Total</b> ...	<b>23,080,191</b>	<b>24,758,774</b>	<b>26,714,676</b>	<b>27,677,595</b>	<b>29,511,639</b>

The figures in the above table are subject to the limitation that the actual returns for 1906 for the States of New South Wales and South Australia are not available. In order to present an approximate total for the Commonwealth, however, 1901 figures for New South Wales, and 1907 figures for South Australia are included for the year specified. It may be seen that the total net increase during the four years was £6,431,448, or an annual average of £1,607,862. In Class XII., there was a comparatively small decrease, which amounted to £58,884. The largest increases were in Classes V. and VII., and amounted to £1,241,493 and £1,272,187 respectively.

(ii.) *Value in each State, 1910.* The following table gives similar information for each State up to the 31st December, 1910:—

## VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1910.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	378,213	353,708	61,473	85,539	23,980	17,772	920,685
II. Treating oils and fats, animal, vegetable, etc. ...	186,712	111,204	25,331	55,716	10,116	5,000	394,079
III. Processes in stone, clay, glass, etc. ...	569,041	331,739	34,240	68,606	44,172	25,814	1,073,612
IV. Working in wood ...	709,769	300,262	147,821	115,862	156,737	62,222	1,492,673
V. Metal works, machinery, etc. ...	2,068,001	1,059,707	491,927	480,962	405,985	48,111	4,554,693
VI. Connected with food and drink, etc. ...	2,413,622	2,124,617	1,206,164	700,909	399,423	554,890	7,399,625
VII. Clothing and textile fabrics, etc. ...	1,764,578	1,532,722	265,375	361,302	151,100	116,411	4,191,488
VIII. Books, paper, printing and engraving ...	1,091,252	925,570	391,762	264,592	164,128	42,450	2,779,754
IX. Musical instruments, etc. ...	53,024	19,508	...	3,100	...	...	75,632
X. Arms and explosives ...	6,653	31,810	...	...	...	...	38,763
XI. Vehicles and fittings, saddlery and harness, etc. ...	494,119	390,904	125,323	182,396	73,970	58,440	1,325,152
XII. Ship and boat building and repairing ...	610,003	417,160	8,235	12,010	2,760	2,700	1,052,868
XIII. Furniture, bedding and upholstery ...	296,160	258,395	79,852	67,953	39,980	21,830	764,170
XIV. Drugs, chemicals, and by-products ...	192,430	284,087	10,000	126,446	74,199	...	687,162
XV. Surgical and other scientific instruments ...	25,344	10,793	10,912	4,320	4,780	...	56,149
XVI. Jewellery, timepieces, and platedware ...	94,652	104,000	24,142	26,920	5,720	16,400	271,834
XVII. Heat, light, and power ...	1,019,030	730,557	150,847	60,070	105,641	46,075	2,112,220
XVIII. Leatherware, n.e.i. ...	36,831	44,675	8,150	7,060	3,380	...	100,096
XIX. Minor wares, n.e.i. ...	99,042	80,845	4,420	24,955	8,882	2,900	220,984
Total ...	12,108,776	9,012,263	3,045,974	2,648,658	1,674,953	1,021,015	29,511,639

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £7,399,625, or 25.07 per cent. on the total value. The next classes in importance were Classes V., VII., VIII., and XVII., in which the values were £4,554,693, £4,191,488, £2,779,754, and £2,112,220 respectively. The sum of the values for the five classes mentioned amounted to £21,037,780, or 71.23 per cent. on the total value for all classes.

(iii.) *Total Value in each State, 1904 to 1910.* The following table shews the total value, so far as returns are available, of land and buildings occupied as manufactories in each State at the end of each year from 1904 to 1910 inclusive:—

## TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1904 to 1910.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1904...	*8,029,890	7,641,051	2,699,191	2,140,516†	1,731,233	1,000,481	23,242,362
1905...	*8,029,890	7,771,238	2,709,951	2,140,516†	1,685,597	963,517	23,300,709
1906...	*8,029,890	8,062,110	2,405,559	2,140,516†	1,775,279	666,837	23,080,191
1907...	9,508,259	8,376,642	2,261,539	2,140,516	1,637,207	834,611	24,758,774
1908...	10,440,260	8,589,027	2,763,085	2,311,650	1,565,756	1,044,898	26,714,676
1909...	11,014,362	8,642,344	2,888,923	2,432,655	1,522,692	1,176,619	27,677,595
1910...	12,108,776	9,012,263	3,045,974	2,648,658	1,674,953	1,021,015	29,511,639

\* 1901 figures. † 1907 figures, those for previous years not being available.

It may be seen that, so far as returns are available, there has been a general though irregular increase in all the States with the exception of Western Australia, where there was a slight fall; this is probably due to the general reduction in values of real estate in that State during the past few years. The fall in Tasmania for 1910 was due

to the temporary closing down of a large pyrites works, otherwise a further increase would have been shown for that State. The irregularities in some of the States are probably due partly to the returns having been made on different bases for the succeeding years in carrying into effect the resolutions passed at the Conferences of Statisticians (see § 1. 2 hereof).

**3. Value of Plant and Machinery.**—The following table shews for the whole Commonwealth the approximate value of plant and machinery used in connection with factories at the end of each year from 1906 to 1910 inclusive. The figures, however, are subject to certain limitations, inasmuch as returns for South Australia for 1906 are not available; South Australian figures for 1907 have therefore been taken for that year.

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH,  
1906 to 1910.**

Class of Industry.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ....	618,891	644,597	671,015	726,786	803,220
II. Treating oils & fats, animal, vegetable, etc. ....	328,484	331,595	349,997	349,479	360,660
III. Processes in stone, clay, glass, etc. ....	745,504	752,084	833,809	901,193	1,109,139
IV. Working in wood... ..	1,422,545	1,506,933	1,583,496	1,623,497	1,852,296
V. Metal works, machinery, etc. ....	3,749,781	4,237,810	4,633,656	4,941,632	5,255,575
VI. Connected with food and drink, etc. ....	7,436,991	7,340,941	7,744,682	7,772,770	8,212,440
VII. Clothing and textile fabrics, etc. ....	1,177,456	1,132,063	1,158,688	1,280,102	1,403,135
VIII. Books, paper, printing, and engraving ....	1,889,705	1,993,135	2,091,168	2,207,930	2,362,268
IX. Musical instruments, etc. ....	6,327	7,829	9,124	11,263	16,443
X. Arms and explosives ....	44,476	45,613	46,113	45,940	47,012
XI. Vehicles & fittings, saddlery & harness, etc. ....	194,136	195,271	204,138	220,746	249,973
XII. Ship and boat building, and repairing ....	353,371	352,486	432,803	434,905	443,429
XIII. Furniture, bedding, and upholstery ....	97,392	106,613	117,481	126,000	150,774
XIV. Drugs, chemicals, and by-products ....	306,285	332,349	398,028	435,019	517,781
XV. Surgical and other scientific instruments ....	7,329	6,340	8,144	9,215	9,939
XVI. Jewellery, timepieces, and platedware ....	38,796	45,927	46,160	43,980	49,490
XVII. Heat, light, and power ....	5,242,509	5,555,544	5,481,759	5,561,333	5,961,816
XVIII. Leatherware, n.e.i. ....	15,489	16,523	18,989	19,555	24,651
XIX. Minor wares, n.e.i. ....	68,831	82,435	98,503	116,097	120,669
Total ... ..	23,744,298	24,686,108	25,927,763	26,827,442	28,950,700

It may be seen that during the period in question there has been a steady and substantial net increase amounting in all to £5,206,402, or an annual average of £1,301,601. The increase has occurred in all classes of industry, the largest increase being in Class V., "Metal Works, Machinery, etc.," amounting to £1,505,794, while the two next largest were in Class VI., "Connected with Food and Drink, etc.," amounting to £775,449, and Class XVII., "Heat, Light, and Power," with an increase of £719,307.

(i.) *Total Value in each State, 1904 to 1910.* The classified figures in the preceding table for the whole Commonwealth are shewn below for each State. It will be seen that the progress in value referred to is general throughout the States. New South Wales shews by far the largest increase, viz., £3,929,717; while Victoria comes next with £1,573,951.

**VALUE OF PLANT AND MACHINERY IN FACTORIES, 1904 to 1910.**

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1904	7,648,903	6,027,134	4,200,303	1,900,744*	1,776,481	753,967	22,307,532
1905	8,031,948	6,187,919	3,988,056	1,900,744*	1,834,098	753,924	22,696,689
1906	8,407,337	6,450,355	4,282,502	1,900,744*	1,861,477	841,883	23,744,298
1907	9,155,772	6,771,458	3,989,679	1,900,744	1,893,351	975,104	24,686,108
1908	9,718,842	6,957,606	4,470,145	2,064,097	1,744,652	972,421	25,927,763
1909	10,330,724	7,140,304	4,457,314	2,135,203	1,728,207	1,035,690	26,827,442
1910	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,020,156	28,950,700

\* Figures for 1907, previous years not being available.

(ii.) *Classified Value in each State, 1910.* The following table shews the value of plant and machinery used in factories in each State during the year 1910, classified according to the nature of the industry in which used:—

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1910.**

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	354,562	251,136	103,220	65,297	17,405	11,600	803,220
II. Treating oils and fats, animal, vegetable, etc. ...	174,001	121,498	39,202	18,018	6,725	1,216	360,660
III. Processes in stone, clay, glass, etc. ...	695,082	247,901	44,286	64,211	44,051	13,608	1,109,139
IV. Working in wood ...	609,607	335,444	358,026	61,473	369,175	118,571	1,852,296
V. Metal wks., machinery, etc. ...	2,670,504	1,047,566	488,972	446,628	314,526	287,379	5,255,575
VI. Connected with food and drink, etc. ...	2,887,467	1,645,727	2,675,302	527,243	314,483	162,218	8,212,440
VII. Clothing and textile fabrics, etc. ...	442,845	680,718	123,309	84,329	24,158	47,776	1,403,135
VIII. Books, paper, printing, and engraving ...	915,848	786,152	232,890	187,486	172,739	67,153	2,362,268
IX. Musical instruments, etc. ...	9,630	5,963	...	850	...	...	16,443
X. Arms and explosives ...	1,280	45,732	...	...	...	...	47,012
XI. Vehicles and fittings, saddlery and harness, etc. ...	85,114	75,267	26,738	40,656	15,487	6,711	249,973
XII. Ship and boat building and repairing ...	362,855	60,265	10,828	6,420	1,506	1,575	443,429
XIII. Furniture, bedding, and upholstery ...	43,375	50,194	19,537	26,074	7,453	4,141	150,774
XIV. Drugs, chemicals, and by-products ...	167,449	168,379	4,250	107,002	70,701	...	517,781
XV. Surgical and other scientific instruments ...	3,951	2,408	1,645	900	1,025	...	9,929
XVI. Jewellery, timepieces, and platedware ...	20,298	20,602	2,887	3,757	1,316	630	49,490
XVII. Heat, light, and power ...	2,068,638	1,984,043	493,822	582,479	530,621	297,213	5,961,816
XVIII. Leatherware, n.e.i. ...	11,474	11,738	649	240	550	...	24,651
XIX. Minor wares, n.e.i. ...	54,640	60,352	976	2,655	1,681	365	120,669
Total ...	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,020,156	28,950,700

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £8,212,440, or 28.37 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £5,961,816, or 20.59 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £5,255,575, or 18.15 per cent. on the total value. The total for the three classes just specified amounts to £19,429,831, or 67.11 per cent. on the total value for all classes.

## § 8. Individual Industries.

1. *General.*—The preceding remarks and tables furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories referred to in § 1.3 hereof. In order to make the information complete, it must necessarily be supplemented by details exhibiting the development of individual industries. This alone will furnish adequate information as to the channels into which the main efforts of Australian manufacture flow. While it is not possible, within the limits of this article, to give anything like a detailed account of the manufacturing industries of the Commonwealth, it is proposed to deal herein with such particular industries as are of special importance by reason of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only one or two establishments of a particular class in any State, returns relative to output are not published, in order to avoid disclosing information as to the operations of individual factories.



**2. Tanning Industry.**—In Class I. (see § 1. 3 hereof) the most important industry is tanning. Until recent years the production of tanneries in Australia was confined to the coarser class of leathers, but lately the tanning of the finer skins has been undertaken with satisfactory results. The position of the industry in the several States in 1910 was as follows:—

**TANNERIES, 1910.**

Items.	N.S.W	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories ... ..	76	55	18	15	4	8	176
" employees ... ..	1,023	1,487	221	246	67	66	3,110
Actual horse-power of engines employed ... ..	1,073	1,390	271	220	97	74	3,125
Approx. value of lands and buildings ... ..	£ 100,320	134,159	20,792	27,187	10,020	9,022	301,500
Approx. value of plant and machinery ... ..	£ 83,302	90,370	13,490	11,871	6,070	7,150	212,253
Total amount of wages paid during year ... ..	£ 102,057	140,959	20,595	25,470	8,105	5,826	303,012
Value of fuel used ... ..	£ 8,122	9,092	1,253	1,707	501	2,069	23,644
Value of raw material worked up ... ..	£ 774,936	885,672	149,945	115,247	41,450	31,262	1,998,512
Total value of output ... ..	£ 971,910	1,137,608	210,345	155,868	52,217	42,910	2,570,858
Value added in process of manufacture ... ..	£ 196,974	251,936	63,400	40,621	10,767	11,648	573,346

(i.) *Progress of Tanning, etc. Industries, 1906 to 1910.* For years prior to 1908 returns for tanneries are not generally available separately, but are grouped with the wool-scouring and fellmongering industries. The development of the tanning, fellmongering, and wool-scouring industries during the period 1906 to 1910 is shewn in the following table, from which it will be seen that though the number of factories is almost stationary, the number of employees shews a satisfactory increase, amounting to 14.35 per cent. during the period under consideration.

**DEVELOPMENT OF TANNING, Etc., INDUSTRIES, 1906 to 1910.**

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N. S. Wales ... ..	154	152	146	147	140	2,427	2,507	2,396	2,544	2,640	£ 172,553	£ 159,850	£ 167,071	£ 188,820	£ 246,082
Victoria ... ..	84	90	92	93	89	1,657	1,893	2,001	1,991	1,954	114,951	124,064	133,376	142,425	141,702
Queensland ... ..	40	37	39	36	40	513	615	685	667	763	84,758	81,225	91,492	88,337	96,811
S. Australia ... ..	14	12	14	15	17	341	294	34	288	286	9,197	11,991	14,161	13,986	
West. Australia ... ..	2	3	3	4	4	61	64	60	61	67	5,500	5,500	5,640	5,500	6,070
Tasmania ... ..	3	6	9	8	8	54	67	74	68	66	6,600	6,550	7,476	7,600	7,150
Commonwealth	297	300	303	303	298	5,054	5,440	5,570	5,633	5,784	384,354	386,386	417,046	446,855	510,801

\* No information available. † Exclusive of South Australia.

(ii.) *Production of Tanneries, 1910.* The quantity of raw materials used and the quantity and value of leather produced in tanneries in each State during the year 1910 are shewn in the following table:—

**RAW MATERIALS USED AND LEATHER PRODUCED IN TANNERIES, 1910.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
<b>RAW MATERIALS USED.</b>							
Hides ... No. (,000 omitted)	529	496	79	90	27	16	1,237
Pelts treated No. ... ..	4,325		*	72	...		24,779
Bark ... .. Tons	10,218	10,081	1,767	1,536	693	484	
<b>LEATHER AND BASILS PRODUCED.</b>							
LEATHER—							
Quantity lbs. (,000 omitted)	13,855	19,125	2,463	2,552	956	231	39,183
Value ... .. £	68,811	950,000	157,001	148,448	51,775	28,318	2,104,353
BASILS—							
Quantity lbs. (,000 omitted)	4,130	707	*	86	...	39	*
Value ... .. £	181,657	32,000	*	6,364	...	2,865	*

\* Not available.

3. **Soap and Candle Factories.**—In Class II. (see § 1. 3 hereof) the manufactures of soap and candles are the most important industries. These two manufactures are frequently carried on in the same establishments, so that separate returns cannot be obtained; it may, however, be said generally that the manufacture of soap is the more important of the two. The following table gives particulars of soap and candle factories in each State during the year 1910:—

### SOAP AND CANDLE FACTORIES, 1910.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwltth.
Number of factories ... ..	33	16	17	6	4	2	78
" employees ... ..	624	540	168	192	50	32	1,606
Actual horse-power of engines employed	473	239	138	101	35	16	1,002
Approximate value of land and buildings	£ 129,526	99,924	25,331	41,436	10,116	5,000	311,333
" plant and machinery	£ 132,004	113,418	39,202	13,128	6,725	1,216	305,693
Total amount of wages paid during year	£ 46,271	51,518	16,199	19,671	3,862	2,902	140,423
Value of fuel used	£ 11,374	13,711	1,834	5,940	313	*	†33,172
Value of raw material worked up	£ 346,133	355,000	71,404	108,985	59,348	*	†941,770
Total value of output	£ 547,598	516,508	110,885	176,067	72,118	*	†1,423,176
Value added in process of manufacture	£ 201,465	160,608	39,481	67,082	12,770	*	†481,406

\* As there are only two soap and candle factories in this State, returns relative to output, etc., are not disclosed. † Exclusive of Tasmania.

(i.) *Development of Soap and Candle Factories, 1906 to 1910.* The following table gives particulars for the last five years regarding the number of factories and employees and the value of plant and machinery in these industries in each State:—

### DEVELOPMENT OF SOAP AND CANDLE FACTORIES, 1906 to 1910.

State.	Number of Factories.					Average Number of Employees.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
N.S.W.	41	34	29	26	33	602	553	553	571	624	121,313	127,311	135,786	127,437	132,004
Vic. ...	15	15	17	17	16	523	510	535	563	540	104,244	106,326	109,768	111,252	113,418
Q'land ...	14	15	16	18	17	142	142	159	174	168	33,599	35,562	35,794	40,102	39,202
S. Aus. ...	8	7	6	7	6	207	166	164	185	192	*	11,896	12,484	14,224	13,128
W. Aus. ...	3	3	3	3	4	61	57	50	50	50	8,216	6,938	4,910	3,200	6,725
Tas. ...	2	2	2	2	2	35	35	35	39	32	4,300	3,600	4,000	3,800	1,216
C'wltth...	83	76	73	73	78	1,570	1,463	1,496	1,582	1,606	†271,672	291,633	302,742	300,015	305,693

\* Information not available. † Exclusive of South Australia.

(ii.) *Production of Soap and Candles, 1906 to 1910.* The subjoined statement shews that there has been a considerable increase in the output of both of these products. As regards the production of soap an increase is shewn in all the States. The returns as to the production of candles are incomplete for 1906 and 1907; it will be seen, however that there has been a considerable increase in New South Wales during the past four years, and that the production in the whole of the Commonwealth during 1910 shews an increase of 1,865,716 lbs. over that for 1908.

### PRODUCTION OF SOAP AND CANDLES, 1906 to 1910.

State.	Soap.					Candles.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
	cwt.	cwt.	cwt.	cwt.	cwt.	lbs.	lbs.	lbs.	lbs.	lbs.
N.S.W.	221,834	225,217	217,321	206,678	245,538	4,799,898	5,656,354	5,566,776	6,922,468	6,689,875
Vic. ...	154,570	153,478	162,757	176,162	187,433	4,826,528	5,341,056	4,222,960	5,091,520	5,014,016
Q'land...	64,130	59,900	67,755	73,466	74,338	*	*	1,023,160	557,312	965,040
S. Aus. ...	*	56,745	61,614	66,043	66,800	*	1,975,075	1,806,725	1,678,900	1,788,224
W. Aus. ...	26,960	31,774	29,767	35,419	34,707	1,567,768	1,300,625	1,259,214	1,309,066	1,225,356
Tas. ...	7,360	9,679	10,500	9,900	8,642	703,360	672,000	448,000	537,600	495,040
C'wltth...	474,854	536,793	549,714	567,648	617,458	11,897,554	14,945,110	14,331,835	16,096,886	16,197,551

\* Not available. † Incomplete.

(iii.) *Raw Material Used, 1910.* The following statement shows the quantity of certain raw materials used in soap and candle factories in each State during the year 1910 :—

#### RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Tallow ... .. cwt.	109,540	141,771	33,945	46,462	12,092	5,225	349,035
Alkali ... .. lbs.	46,716	44,012	19,337	10,808	11,841	1,296	134,010
Cocoonut oil ... .. gal.	228,541	79,389	...	47,872	...	...	355,802

In addition to the above, Queensland returns shew 7 cwt. and Tasmanian returns 945 cwt. of copra.

4. *Saw Mills, etc.*—The most important industry in Class IV. is that of saw-milling. As separate particulars of forest saw mills are not available for some of the States, both forest and other saw mills as well as joinery, moulding and box factories have been combined in the following table.

#### SAW MILLS, FOREST AND OTHER, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ... ..	572	298	221	86	63	110	1,350
" employees ... ..	6,966	5,461	3,727	1,614	3,922	1,734	23,424
Actual horse-power of engines employed	11,650	6,915	5,403	1,342	3,034	2,176	30,520
Approx. value of land and buildings	£ 650,689	248,671	137,001	108,607	156,737	62,222	1,363,927
" plant and machinery	£ 576,164	315,429	355,847	58,892	369,175	118,571	1,794,078
Total amount of wages paid during year	£ 590,906	502,406	331,376	149,350	585,841	130,180	2,290,059
Value of fuel used ... ..	£ 8,970	8,943	6,228	4,031	1,334	350	29,856
Value of raw material worked up	£ 1,374,317	775,280	493,664	656,996	55,271	16,893	3,372,421
Total value of output ... ..	£ 2,335,166	1,581,800	1,071,849	923,371	794,157	215,967	6,928,310
Value added in process of manufacture	£ 960,849	808,520	578,185	272,375	738,886	199,074	3,555,889

5. *Agricultural Implement Factories.*—The manufacture of agricultural implements is an important industry in Australia, and is of particular interest owing to the fact that it is one of the first industries to which what has been called the "New Protection" system was sought to be applied (see Section XXVII. hereof). The nature of the machines manufactured may be gathered from the machines scheduled in the Customs tariff, 1906-7, which includes stripper harvesters, strippers, stump-jump ploughs, disc cultivators, winnowers, corn-shellers and baggers, drills, and other implements usually employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is exported to many countries.

The following table gives particulars of the agricultural implement works of Australia for the year 1910 :—

#### AGRICULTURAL IMPLEMENT WORKS, 1910.

Items.	N.S.W.	Victoria	Q'land.	S.Aust.	W.A.	Tas.	C'w'lth.
Number of factories ... ..	21	50	4	60	6	9	150
" employees ... ..	600	2,255	364	1,544	73	32	4,868
Actual horse-power of engines employed	162	810	141	1,041	69	5	2,228
Approx. value of land and buildings	£ 58,870	90,171	7,618	64,047	5,690	1,540	227,936
" plant and machinery	£ 18,575	105,429	14,283	62,315	6,663	920	208,185
Total amount of wages paid during year	£ 53,680	231,919	30,276	145,304	8,557	1,195	470,931
Value of fuel used ... ..	£ 1,977	21,537	953	9,371	1,050	182	35,070
Value of raw material worked up	£ 244,168	300,718	36,236	152,639	7,896	1,375	743,032
Total value of output ... ..	£ 338,833	742,326	85,329	372,175	18,586	3,631	1,560,880
Value added in process of manufacture	£ 94,665	441,608	49,093	219,536	10,690	2,256	817,848

(i.) *Development of Agricultural Implement Works.* The following table shews the progress of this industry during the years 1906 to 1910 :—

## AGRICULTURAL IMPLEMENT WORKS, 1906 to 1910.

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
											£	£	£	£	£
N.S.W.	17	21	20	21	21	440	499	434	481	600	12,850	16,426	16,008	18,063	18,575
Vic. ...	53	55	52	52	50	1,747	1,618	1,441	1,892	2,255	62,808	66,492	69,335	84,067	105,429
Q'land	8	4	2	4	4	117	142	108	284	364	11,470	9,444	8,244	12,121	14,283
S. Aus.	49	49	54	59	60	874	827	1,092	1,346	1,544	*	34,034	38,157	49,405	62,315
W. Aus.	6	2	3	5	6	56	15	25	49	73	2,470	3,450	4,259	5,277	6,663
Tas. ...	...	13	9	7	9	...	45	34	29	32	...	796	235	845	920
C'w'ith	133	144	140	148	150	3,234	3,146	3,134	4,081	4,868	†89,598	130,642	136,238	169,778	208,185

\* Not available. † Exclusive of South Australia.

6. **Engineering, Ironworks, and Foundries.**—The classification in these industries is not very satisfactory. Generally, engineering shops, ironworks, and foundries are included, as also are factories for making nails, safes, patterns, meters, and springs. Railway workshops, agricultural implement factories, cyanide, smelting, pyrites, and metallurgical works, galvanised iron, stoves and ovens, and wire working establishments are not included. The combination of industries is rendered necessary by the limited classification still adopted by some of the States.

## ENGINEERING, IRONWORKS, AND FOUNDRIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'ith.
Number of factories ...	247	320	96	51	45	22	781
" employees ...	7,851	6,766	2,241	1,888	913	450	20,109
Actual horse-power of engines employed	6,232	4,024	1,001	1,302	666	268	13,493
Approx. value of land and buildings £	647,208	420,202	131,350	82,665	73,547	27,900	1,382,872
plant and machinery £	618,479	553,015	157,890	108,669	62,758	40,296	1,541,107
Total amount of wages paid during year £	764,786	649,961	206,540	176,766	107,743	42,530	1,948,326
Value of fuel used ...	60,786	69,750	12,558	13,764	6,357	3,234	166,449
Value of raw materials worked up £	1,023,766	844,830	204,272	214,242	91,789	35,311	2,414,210
Total value of output ...	2,280,817	1,962,369	573,425	477,490	252,210	89,737	5,636,048
Value added in process of manufacture £	1,257,051	1,117,539	369,153	263,248	160,421	54,426	3,221,838

In addition to engineering works which supply local domestic requirements, there are now a number of large and important establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining and smelting machinery and apparatus forms an important section of this industry, and many Australian mines have been locally equipped.

7. **Railway Carriages and Rolling Stock, Railway and Tramway Workshops.**—The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State institutions. The following table gives the details concerning them, but includes also private establishments manufacturing rolling stock :—

## RAILWAY CARRIAGES AND ROLLING STOCK, RAILWAY AND TRAMWAY WORKSHOPS, 1910.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'ith.
Number of factories ...	26	15	7	8	7	5	68
" employees ...	6,268	3,559	1,496	1,813	1,474	305	14,915
Actual h.p. of engines employed	2,734	799	1,463	356	1,910	122	7,384
Approx. value of land and buildings £	804,966	294,958	278,007	236,283	322,878	2,000	1,939,092
Approx. value of plant and machinery £	510,575	203,705	180,704	152,879	244,700	102,094	1,394,657
Total amt. of wages paid during year £	787,719	436,525	166,618	213,470	203,987	33,823	1,842,142
Value of fuel used ...	17,840	14,180	4,851	8,396	11,252	1,258	57,777
Value of raw material worked up £	576,608	484,497	174,202	135,048	167,945	20,598	1,558,898
Total value of output ...	1,485,615	1,013,124	344,878	357,423	390,218	56,910	3,648,168
Value added in process of manufacture £	909,007	528,627	170,676	222,375	222,273	36,312	2,089,270

**8. Smelting Works.**—The subjoined table gives particulars of metal smelting, cyanide, pyrites, and metallurgical works. The classification of these works does not appear to be carried out on an uniform basis in the several States, and the combination of industries is, therefore, somewhat unsatisfactory. The returns do not include particulars of plants used on mines.

**SMELTING, CYANIDE, PYRITES, Etc., WORKS, 1910.**

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ... ..	37	98	8	7	...	7	157
" employees ... ..	3,292	690	361	1,454	...	1,064	6,861
Actual horse-power of engines employed	11,884	380	826	4,634	...	735	18,709
Approx. value of land and buildings £	251,167	15,298	2,018	21,664	...	8,511	298,858
" plant and machinery £	1,358,607	55,341	93,362	73,308	...	141,531	1,722,119
Total am't of wages paid during year £	536,312	53,940	50,438	210,277	...	144,119	995,086
Value of fuel used ... ..	361,037	4,889	15,711	115,955	...	79,674	580,326
Value of raw material worked up	3,645,087	90,965	247,801	981,216	...	535,060	5,498,129
Total value of output ... ..	5,659,203	203,271	308,019	1,651,238	...	1148,604	8,960,385
Value added in process of manufact're	2,014,116	112,306	60,218	670,072	...	603,541	3,462,256

\* See third paragraph below.

In New South Wales and Queensland the above figures represent smelting works; those for Victoria include eighty-eight cyanide works, four metallurgical, four pyrites, and two smelting works; South Australia five cyanide and two smelting; and Tasmania four smelting and three pyrites works.

The largest output for the year under review was in New South Wales, viz., £5,659,203, or 63.16 per cent. on the total output for the Commonwealth. South Australia came next with £1,651,238, or 18.43 per cent.; this amount is made up of £1,643,497 smelting and £7791 cyanide. Of the total for Tasmania the output of smelting was £1,130,534, the balance £8070 representing that obtained from pyrites works. The output in Victoria was £118,285, £17,629, £40,519, and £26,838 from cyanide, metallurgical, pyrites, and smelting works in the order named.

In Western Australia all the plants are worked on the mines and are therefore not collected.

**9. Bacon-curing Factories.**—The following table gives particulars of factories engaged in bacon-curing in each State during the year 1910:—

**BACON-CURING FACTORIES, 1910.**

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ... ..	19	25	5	11	3	7	70
" employees ... ..	166	335	245	71	19	41	877
Actual horse-power of engines employed	144	388	193	58	18	44	845
Approx. value of land and buildings £	45,727	34,675	46,634	11,157	6,190	6,051	160,434
" plant and machinery £	17,389	26,799	16,698	4,520	1,250	4,325	70,981
Total amount of salaries and wages paid £	20,145	30,035	30,798	6,064	2,888	3,267	93,197
Value of fuel used ... ..	4,411	4,179	2,848	502	279	251	12,470
Value of raw material worked up	297,981	408,119	215,030	948	76,796	17,959	1,090,803
Total value of output ... ..	347,872	483,469	343,211	86,457	81,070	29,244	1,371,323
Value added in process of manufacture £	49,891	75,350	128,211	11,509	4,274	11,285	280,520

Further information regarding the bacon-curing industry may be found in Section IX., *Farmyard and Dairy Production*.

(i.) *Quantity and Value of Production, 1910.* The following table shews the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State during the year 1910:—

## PRODUCTION OF BACON-CURING FACTORIES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.*	Tasmania.	C'wealth.
QUANTITY. (,000 omitted).							
Bacon & ham lbs.	10,174	13,455	9,916	2,656	...	614	36,815
Lard ... lbs.	598	587	677	98	...	58	2,018
VALUE.							
Bacon & ham £	308,401	450,469	303,879	83,974	...	21,174	1,167,897
Lard ... £	11,836	14,000	16,363	2,348	...	1,194	45,741
Other products £	11,401	19,000	22,737	135	...	6,876	60,149
PIGS KILLED.							
Number ...	118,017	142,429	119,718	30,127	...	15,031	425,322

\* In Western Australia all bacon and hams are imported and some are subsequently smoked in that State.

10. **Butter, Cheese, and Condensed Milk Factories.**—The subjoined table gives particulars of butter, cheese, and condensed milk factories in each State during the year 1910. The returns are exclusive of butterine and margarine factories.

## BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories ...	181	203	82	53	3	26	548
" employees ...	1,046	1,261	814	232	8	118	3,479
Actual horse-power of engines employed	2,259	2,433	943	356	29	162	6,182
Approximate value of land and buildings £	194,316	233,189	89,083	38,397	2,327	19,432	576,644
plant & machinery £	231,679	280,103	147,396	28,620	4,070	16,371	708,239
Total amount of wages paid ...	£ 108,844	121,128	73,447	13,990	1,168	5,928	324,505
Value of fuel used ...	£ 25,749	19,593	10,703	2,753	165	653	59,616
Value of raw material worked up	£ 3,081,388	2,707,540	1,205,000	301,787	9,174	73,257	7,378,146
Total value of output ...	£ 3,335,331	2,980,669	1,466,512	348,716	10,722	88,832	8,230,782
Value added in process of manufacture £	253,943	273,129	261,512	46,929	1,548	15,575	852,636

(i.) *Development of Factories, 1906 to 1910.* The following table shews the progress of the factories in this industry from 1906 to 1910 :—

## DEVELOPMENT OF BUTTER, Etc., FACTORIES, 1906 to 1910.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	179	188	183	181	181	1,045	1,023	979	1,014	1,046	£ 218,566	£ 244,438	£ 247,678	£ 229,940	£ 231,679
Vict. ...	221	223	215	211	203	1,482	1,449	1,294	1,190	1,261	307,635	311,241	282,012	281,630	280,103
Q'land	81	83	82	80	82	1,333	1,376	1,238	760	814	104,157	133,861	145,531	136,049	147,396
S. Aust.	55	57	54	53	53	141	213	212	216	232	*	25,224	27,539	29,353	28,620
W. Aus.	2	2	2	3	3	5	5	6	10	8	2,300	2,300	2,300	4,117	4,070
Tas. ...	20	23	24	22	26	76	81	95	93	118	13,351	8,199	11,618	11,040	16,371
C'w'lh.	558	576	560	550	548	4,082	4,147	3,824	3,283	3,479	£ 646,009†	£ 725,263	£ 716,678	£ 694,129	£ 708,239

\* Not available. † Exclusive of South Australia.

(ii.) *Quantity and Value of Production, 1910.* The following table shews the quantity and value of butter, cheese, and condensed milk produced, and the quantity of milk used in butter, cheese, and condensed milk factories in each State during 1910 :—

## PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Butter ... lbs.	71,390	65,063	29,059	6,721	214	1,781	174,228
Cheese ... "	3,081	2,707	4,019	1,758	...	465	12,060
Condensed and concentrated milk ... lbs.	1,940	2,707	7,844	...	...	...	12,491
VALUE (,000 OMITTED).							
Butter ... £	3,160	2,865	1,240	310	11	78	7,664
Cheese ... £	75	68	90	38	...	10	281
Condensed and concentrated milk ... £	27	45	136	...	...	...	208
MILK USED (,000 OMITTED).							
Butter factories ... gals.	179,554	145,815	67,639	14,423	486	4,452	412,369
Cheese " "	3,250	2,730	3,797	1,803	...	466	12,046
Condensed milk factories " "	582	945	2,104	...	...	...	3,631

The butter, cheese and condensed milk industries are dealt with more fully in Section IX., *Farmyard and Dairy Production*.

11. **Meat and Fish Preserving, Ice and Refrigerating Works.**—These industries are now of considerable importance in Australia. The freezing of various kinds of produce for export has long been an established industry. Large freezing works have been installed at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, and insulated space for the carriage of frozen produce is provided by a number of steamship companies trading between Australia and other parts of the world. Particulars regarding the export of frozen beef and mutton may be found on pages 343 and 347 hereof respectively. Special terms have been made by the Commonwealth Government in its English mail contract for the provision by the contractors of ample cold-storage facilities. The export of frozen produce is stated to be capable of considerable expansion. The particulars given in the subjoined table include ice-making and freezing works, and also meat-canning factories, separate particulars for each item for all the States not being available.

## MEAT AND FISH-PRESERVING, ICE AND REFRIGERATING WORKS, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	90	33	35	15	10	6	189
employees ...	2,049	936	1,801	303	90	32	5,311
Actual horse-power of engines employed	3,837	3,355	3,376	702	582	20	11,872
Approx. value of land and buildings £	469,478	276,158	402,467	151,699	59,755	6,000	1,365,557
plant and machinery £	481,490	164,454	270,105	85,614	37,256	3,900	1,042,819
Total amount of wages paid during year £	208,708	85,113	210,214	35,507	12,350	2,030	553,922
Value of fuel used ... £	46,663	33,224	35,861	5,762	6,414	80	128,004
Value of raw material worked up	£3,755,741	550,774	1,850,000	163,698	2,211	50	6,322,474
Total value of output	£4,297,662	721,499	2,300,446	213,114	32,342	3,525	7,568,588
Value added in process of manufacture £	541,921	170,725	450,446	49,416	30,131	3,475	1,246,114

The following table gives particulars, so far as available, of various classes of meat preserved during the year 1910 :—

## MEAT PRESERVING WORKS—PARTICULARS OF ANIMALS TREATED, 1910.\*

Particulars.			N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Sheep treated	...	No.	1,098,577	1,573,516	1,119,660	5,600	...	...	3,792,353
Cattle	"	No.	36,145	13,009	167,064	...	...	...	216,318
Pigs	"	No.	253	1,557	2,830	...	...	...	4,640

Large quantities of rabbits, hares, and poultry were treated in freezing works, for which, however, complete returns are not available. Exclusive of Victoria, for which State particulars are not available, the returns shew that 53,420 tons of ice, valued at £111,358, were manufactured in the Commonwealth in 1910.

12. **Biscuit Manufactories.**—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1910:—

## BISCUIT MANUFACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.*	C'w'lth.
Number of factories	6	4	12	3	3	10	38
employees	1,166	1,080	352	110	141	166	3,015
Actual horse-power of engines employed	363	148	97	50	83	62	803
Approx. value of land and buildings	£ 87,648	52,150	28,640	15,667	8,734	16,046	208,895
plant and machinery	£ 78,272	46,800	19,443	9,265	12,013	19,065	184,861
Total amount of wages paid during year	£ 69,483	63,018	25,544	8,479	11,881	9,876	187,281
Value of fuel used	£ 6,356	8,159	1,140	1,214	1,377	1,131	19,380
Value of raw material worked up	£ 273,865	270,120	66,383	17,536	43,102	34,282	704,288
Total value of output	£ 449,463	432,367	122,584	36,341	63,996	50,631	1,157,381
Value added in process of manufacture	£ 175,518	162,247	56,201	18,804	22,894	11,349	453,093

\* Including confectionery.

13. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Manufactories.**—The jam and fruit-preserving industry has increased in importance of late years, consequent on the extension of fruit-growing. As an exporting industry it is comparatively young, but is of increasing value, and is stated to be capable of considerable expansion. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year 1910. Separate returns for the individual industries are not available for most of the States.

## JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR MANUFACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	34	25	10	27	6	12	114
employees	1,088	1,427	203	467	59	952	4,196
Actual horse-power of engines employed	197	273	69	119	39	273	970
Approx. value of land and buildings	£ 80,100	106,519	8,012	21,007	4,860	37,760	258,248
plant and machinery	£ 29,488	43,497	7,311	10,558	3,140	20,512	114,506
Total amount of wages paid during year	£ 61,320	90,184	10,759	19,363	3,900	36,961	222,486
Value of fuel used	£ 3,522	8,379	635	1,912	342	2,489	17,279
Value of raw material worked up	£ 276,115	460,118	34,030	78,366	12,031	130,021	960,614
Total value of output	£ 432,943	676,484	56,855	136,843	18,537	180,791	1,501,553
Value added in process of manufacture	£ 155,928	216,366	22,825	58,477	6,503	50,770	510,869

(i.) *Quantity and Value of Production, 1910.* The following table shews the quantity and value of jams, pickles, and sauces manufactured in each State during the year 1910:—



## QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCE MANUFACTURED, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
QUANTITY (,000 OMITTED).							
Jam ... lbs.	22,586	34,018	4,627	4,770	517	14,351	80,869
Pickles ... pints	1,978	1,265	400	373	188	4	4,208
Sauce ... pints	2,270	4,174	197	1,058	315	54	8,068
VALUE.							
Jam ... £	291,189	530,000	48,302	62,582	6,408	146,894	1,085,375
Pickles ... £	37,344	23,700	6,387	10,213	3,941	90	81,375
Sauce ... £	38,022	78,700	3,565	19,991	5,618	925	146,821

14. **Confectionery.**—The following table shews the position of the confectionery industry in 1910, and its growth will be apparent when it is stated that at the close of 1900 there were in New South Wales 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, using plant and machinery, valued at £2815 in the former and £19,070 in the latter State.

## CONFECTIONERY FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.*	C'w'lth.
Number of factories ...	36	25	11	6	4	...	82
" employees ...	1,096	1,564	349	256	110	...	3,375
Actual horse-power of engines employed	308	373	57	100	60	...	898
Approx. value of land and buildings	£ 163,192	62,703	18,680	25,286	11,910	...	281,671
" plant and machinery	£ 59,879	50,468	16,719	23,936	8,000	...	158,986
Total amount of wages paid during year	£ 63,247	90,643	19,627	15,511	6,895	...	202,923
Value of fuel used	£ 4,230	6,726	1,058	2,100	920	...	15,084
Value of raw material worked up	£ 289,528	316,390	40,763	42,761	19,710	...	709,152
Total value of output	£ 478,522	497,961	102,255	91,088	33,460	...	1,204,286
Value added in process of manufacture	£ 189,994	181,571	61,492	48,327	13,750	...	495,134

\* Included with biscuit factories.

15. **Flour Mills.**—The following table shews the position of the flour-milling industry in year 1910:—

## FLOUR MILLS, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	72	62	13	54	17	18	236
" employees ...	945	780	201	537	158	141	2,762
Actual horse-power of engines employed	4,238	4,404	874	3,041	752	589	13,948
Approx. value of land and buildings	£ 360,948	217,862	55,223	122,826	58,841	47,740	863,440
" plant and machinery	£ 326,502	242,851	63,859	143,864	56,141	47,435	880,652
Total am't of wages paid during year	£ 117,986	84,863	18,177	58,541	21,285	13,473	314,328
Value of fuel used	£ 25,290	23,903	3,230	18,056	6,437	2,316	79,232
Value of raw material worked up	£ 2,379,769	2,210,086	267,152	893,349	339,342	183,276	6,242,974
Total value of output	£ 2,694,276	2,486,741	349,058	1,066,884	400,521	253,280	7,251,760
Value added in process of manufact're	£ 315,507	276,655	81,906	173,535	61,179	70,004	978,786

(i.) *Production of Flour Mills, 1904 to 1910.* The production of flour by the mills in each State of the Commonwealth in the years 1904 to 1910 was as follows:—

## FLOUR MILLS—PRODUCTION, 1904 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	C'wealth.
	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*
1904	210,137	202,314	34,211	†	20,185	19,822	486,669‡
1905	205,805	209,058	37,505	†	26,420	18,325	497,113‡
1906	225,995	219,166	24,219	†	26,977	17,692	514,049‡
1907	237,442	235,185	28,532	105,395	28,353	17,056	651,963
1908	180,843	192,687	22,266	107,742	31,424	17,426	552,388
1909	214,426	215,547	29,451	97,967	24,878	21,419	603,688
1910	242,813	225,282	27,559	95,885	36,818	20,925	649,282

\* Tons of 2000 lbs. † Not available. ‡ Exclusive of South Australia.

The total production of flour for the Commonwealth for 1910, viz., 649,282 tons, was valued at £5,843,525; in addition 274,856 tons of bran and pollard, valued at £1,311,198, were made. The total quantity of wheat ground in 1910 was 32,004,658 bushels.

16. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry in 1910. This industry is carried on in Queensland and New South Wales, the only States of the Commonwealth in which the sugar-cane is grown.

## SUGAR MILLS, 1910.

Items.	N.S.W.	Queensland.	Total.
Number of factories ... ..	4	49	53
„ employees ... ..	506	4,036	4,542
Actual horse-power of engines employed ... ..	2,578	9,675	12,253
Approximate value of land and buildings £	11,628	263,195	274,823
„ „ plant and machinery £	515,512	1,680,432	2,195,944
Total amount of wages paid during year £	33,367	305,827	339,194
Value of fuel used ... ..	£ 6,239	49,390	55,629
Value of raw material worked up ... ..	£ 117,262	1,262,213	1,379,475
Total value of output ... ..	£ 244,812	2,248,419	2,493,231
Value added in course of manufacture £	127,550	986,206	1,113,756

The first crushing of sugar for commercial use is said to have taken place in New South Wales about 1850 on the plantation of Mr. Thomas Scott; the planting-out of cane was not, however, taken up by settlers, notwithstanding Mr. Scott's earnest advocacy of the industry, until 1862, when a small growth resulted in the establishment of a mill in Queensland. The appliances were rude, but the result satisfactory. In April, 1864, a mill with a modern crushing and boiling plant was opened at Cleveland (Q.) by Hon. Lionel Hope, but success was only partial, and the works were closed down till 1867. In 1866 the Pampania Company opened a small factory in Queensland, and in the following year two other mills started work. Two factories were erected in the Maryborough district, and in 1868 others were working in the Mackay, Bowen and other districts. The industry was by the end of 1870 firmly established.

An unfortunate feature of the industry is that large quantities of molasses have been and still are allowed to run to waste. Part of the molasses produced is used in distillation, part is turned into food cake for cattle, and part is used for manuring land, but the greater part produced is put to no use whatever.

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. The following tables shew the progress of this industry from the dates at which information is first obtainable :—

## SUGAR MILLS, NEW SOUTH WALES, 1870 to 1910.

Items.	1870.	1877.	1886.	1891.	1896.	1901.	1908.	1909.	1910.
Number of factories ...	27	50	64	33	23	12	4	4	4
„ employees ...	...	1,065	2,259	1,621	1,475	695	543	529	506
Sugar produced tons	677	7,537	13,750	16,033	28,557	19,519	14,995	14,810	20,115
Molasses produced gals.	...	345,543	507,000	1,074,080	2,520,580	1,300,909	922,549	1,072,400	918,900

During the year 1910, 160,311 tons of cane were crushed in sugar mills in New South Wales. The reduction in the number of New South Wales mills is due chiefly to the tendency towards concentration of cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-growing has been turned into pastures in connection with the dairying industry.

## SUGAR MILLS, QUEENSLAND, 1868 to 1910.

Items.	1868.	1876.	1886.	1891.	1896.	1901.	1908.	1909.	1910.
Number of factories ...	10	70	118	68	63	52	51	46	49
„ employees ...	...	...	...	...	3,796	...	3,304	3,848	4,036
„ acres crushed	...	7,245	40,786	36,821	66,640	78,160	1,433,315†	1,163,569†	1,840,447†
Sugar produced tons	...	8,214	59,225	51,219	100,774	120,858	151,098	134,584	210,756
Molasses produced gals.	68,622	416,415	1,784,266	1,640,662†	2,195,479	3,679,352	5,980,433	4,763,635	7,329,870

\* Not available. † 1890. ‡ Tons of cane crushed.

Information regarding the cultivation of sugar-cane and the bounties payable on cane grown by white labour may be found in the section of this book dealing with *Agricultural Production*. (See pages 391 to 395.)

**17. Sugar Refineries.**—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1910 there were two sugar refineries in Queensland; and one in each of the States of New South Wales, Victoria and South Australia. The returns for the individual States cannot be disclosed.

In the five refineries in the Commonwealth, an average number of 148½ hands were employed during the year 1910. The approximate value of land and buildings was £278,776; of plant and machinery, £898,263; and the total amount of wages paid during the year was £170,904.

As regards production, the amount of crude sugar used was 183,529 tons, and of refined sugar produced 174,090 tons, valued at £2,782,532, both these amounts being exclusive of the two refineries in Queensland, for which returns are not available.

**18. Breweries.**—Established at an early date in Australia, the main feature of the history of the brewing industry has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. A recent amalgamation in Melbourne resulted in the closing of several large breweries. A workmen's co-operative brewery has been opened in Sydney and a co-operative brewery has been opened in Melbourne by a number of "free" hotelkeepers.

The following table gives particulars of breweries in each State during the year 1910:—

## BREWERIES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lt'h.
Number of factories ...	38	31	11	14	24	6	134
" employees ...	825	1,042	438	349	525	154	3,333
Actual horse-power of engines employed ...	815	2,348	217	320	790	173	4,663
Approx. value of land and buildings ... £	329,563	317,917	101,795	107,309	192,912	404,200	1,453,696
Approx value of plant and machinery ... £	283,264	281,702	81,640	70,851	141,814	44,250	908,521
Total amount of wages paid during year ... £	112,626	139,946	47,040	41,764	85,120	18,846	445,342
Value of fuel used ... £	21,584	28,484	5,780	7,335	11,625	2,293	77,101
Value of raw material worked up ... £	392,984	362,965	136,932	81,756	115,267	48,241	1,138,145
Total value of output ... £	1,064,987	886,465	358,658	286,872	408,672	121,062	3,076,736
Value added by process of manufacture ... £	672,003	473,520	221,726	205,116	293,405	73,821	1,938,591

(i.) *Production and Materials Used, 1910.* The following table shews the quantity and value of ale and stout brewed and the quantity of raw materials used in each State during the year 1910:—

## PRODUCTION AND MATERIALS USED IN BREWERIES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
ALE AND STOUT BREWED.							
Quantity gallons	17,411,827	18,605,737	5,588,724	4,118,024	4,710,849	2,003,949	52,439,110
Value ... £	850,863	825,000	358,658	286,056	395,442	119,309	2,835,328

## RAW MATERIALS USED.

Malt ... bush.	604,366	540,390	189,473	114,754	148,731	77,985	1,675,699
Hops ... lbs.	718,994	663,394	295,063	167,046	233,604	114,020	2,192,121
Sugar ... cwt	82,386	112,240	47,459	22,204	25,817	8,872	298,978

## RAW MATERIALS USED PER 1000 GALLONS OF ALE AND STOUT PRODUCED.

Malt ... bush.	34.71	29.04	33.90	27.87	31.57	38.92	31.96
Hops ... lbs.	41.29	35.66	52.80	40.56	49.59	56.90	41.80
Sugar ... cwt.	4.73	6.03	8.49	5.39	5.48	4.43	5.70

19. *Distilleries.*—The subjoined table gives particulars of distilleries in each State during the year 1910. There are no distilleries in either of the States of Western Australia or Tasmania.

## DISTILLERIES, 1910.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'w'lt'h.
Number of factories ...	3	6	3	18	...	...	30
" employees ...	21	74	25	83	...	...	203
Actual horse-power of engines employed ...	51	160	70	164	...	...	445
Approximate value of land and buildings ... £	4,430	82,715	1,856	21,462	...	...	110,463
Approx. value of plant and machinery ... £	42,965	61,500	7,091	20,690	...	...	132,246
Total amount of wages paid during year ... £	2,814	9,195	3,106	6,460	...	...	21,475
Value of fuel used ... £	1,673	2,049	1,498	2,184	...	...	7,354
Value of raw materials worked up ... £	46,415	26,751	4,789	45,548	...	...	123,503
Total value of output ... £	64,076	45,205	50,170	90,277	...	...	249,728
Value added in process of manufacture ... £	17,661	18,454	45,381	44,729	...	...	126,225

(i.) *Production of Spirits and Materials Used, 1910.* The total quantity of brandy distilled in 1910 was 262,336 proof gallons, and of other spirits was 1,937,367 proof gallons. The materials used comprised 407,651 cwt. of molasses and 2,088,933 gallons of wine. Particulars for the separate States are not available for publication.

20. **Tobacco, Cigars and Cigarettes.**—During the year 1910 there were thirty-five establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. In Queensland there were only two such establishments, and particulars as to output, etc., are therefore not disclosed. In Tasmania there were no factories engaged in this industry.

#### TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	13	14	2	3	3	...	35
employees ...	1,412	2,248	87	154	22	...	3,923
Actual horse-power of engines employed	337	456	12	22	3	...	830
Approx. value of land and buildings £	184,680	177,214	2,840	11,873	3,259	...	379,866
plant and machinery £	125,703	106,521	5,318	12,101	708	...	250,351
Total amount of wages paid during year £	118,325	182,972	4,933	13,904	2,037	...	322,171
Value of fuel used £	1,171	2,526	*	680	5	...	4,382†
Value of raw material worked up £	697,337	624,918	*	47,270	2,230	...	1,371,755†
Total value of output ...	£1,059,748	1,155,995	*	78,357	4,891	...	2,298,991†
Value added in process of manufacture £	362,411	531,077	*	31,087	2,661	...	927,236†

\* As there are only two factories in this State, particulars of output, etc., are not disclosed.  
† Exclusive of Queensland.

(i.) *Quantity of Goods Produced, and Tobacco Leaf Used, 1910.* The following table shews the quantity of goods produced in tobacco factories in each State, and the quantities of imported and Australian-grown leaf used during the year 1910 :—

#### PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
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#### QUANTITY (,000 OMITTED).

Manufact'ed tobacco lbs.	3,850	5,507	196	378	2	...	9,933
{ lbs. 73		229	...	12	6	...	320
Cigars ... { No. 6,845		19,666	...	952	437	...	27,900
{ lbs. 1,549		311	...	...	2	...	1,893
Cigarettes ... { No. 681,636		132,302	...	...	743	...	814,681

#### TOBACCO LEAF USED (,000 OMITTED).

Australian leaf... lbs.	816	193	257	130	3	...	1,399
Imported leaf ... lbs.	4,130	5,198	...	216	8	...	9,552

(ii.) *Development of Industry.* This industry was among the first to be established in Australia. In 1861 New South Wales had eleven factories, producing 177,744 lbs. of manufactured tobacco; in the same year there was one factory in Victoria, but the quantity of tobacco manufactured is not available. In 1896 there were in

New South Wales eight establishments employing 641 persons, of whom 471 were males and 170 females. The plant and machinery employed were valued at £55,700. The production was—tobacco 1,857,616 lbs., cigars 16,553 lbs., and cigarettes 169,520 lbs.; the quantity of leaf used was—Australian 1,349,776 lbs. and imported 693,913 lbs. In Victoria, in the same year, there were twelve establishments employing 650 persons, of whom 424 were males and 226 females. The value of the plant and machinery employed was £42,210. The quantity of manufactured tobacco was 985,811 lbs. and of cigars and cigarettes 92,698 lbs. and 164,766 lbs. respectively. The Australian market has for many years been largely supplied with local manufactures. The quantities imported into Australia during 1910 were—manufactured tobacco 2,260,571 lbs., cigars 330,256 lbs. and cigarettes 114,851 lbs., while the quantities manufactured in Australian factories were respectively 9,993,087 lbs., 319,903 lbs. and 1,862,178 lbs. The following tables shew the development of the tobacco industry in the several States and the Commonwealth during recent years:—

### DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1906 to 1910.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	13	11	12	15	13	1,016	1,103	1,309	1,250	1,412	£ 104,051	£ 111,298	£ 119,012	£ 119,676	£ 125,703
Vic. ...	12	13	13	14	14	1,846	2,019	2,542	2,449	2,248	78,522	88,341	100,880	104,973	106,521
Q'land	2	2	2	2	2	63	71	70	90	87	4,684	2,020	2,300	4,350	5,318
S. Aus.	2	3	3	3	3	135	174	175	180	154	*	12,716	12,084	12,084	12,101
W. Aus.	3	3	3	3	3	30	23	32	22	22	235	265	297	291	708
Tas.† ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
C'wth.	32	32	33	37	35	3,090	3,390	4,137	3,991	3,923	187,492	214,638	234,573	241,374	250,351

State.	Tobacco made.					Cigars made.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	lbs. 4,057,965	lbs. 3,899,196	lbs. 3,916,388	lbs. 3,694,918	lbs. 3,850,154	lbs. 50,326	lbs. 54,048	lbs. 57,716	lbs. 57,148	lbs. 73,194
Vic. ...	4,650,113	4,781,888	5,330,953	5,160,728	5,507,524	207,505	176,704	199,847	210,766	229,315
Q'land	*	90,317	152,331	187,059	195,752	*	...	...	...	...
S. Aus.	*	348,168	434,636	393,913	377,556	*	10,956	9,733	10,001	11,594
W. Aus.	1,280	2,005	3,807	3,549	2,100	8,090	6,373	7,527	7,415	5,800
Tas.† ...	...	...	...	...	...	...	...	...	...	...
C'wth.	†8,709,358	9,121,574	9,838,115	9,440,167	9,933,087	†265,921	248,081	274,823	285,330	319,908
State.	Cigarettes made.					Leaf used.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	lbs. 837,835	lbs. 972,875	lbs. 1,119,269	lbs. 1,300,045	lbs. 1,548,872	lbs. 4,235,089	lbs. 4,304,763	lbs. 4,589,875	lbs. 4,417,173	lbs. 4,945,868
Vic. ...	309,489	328,448	402,548	323,086	310,711	4,604,006	4,770,521	5,802,567	4,934,548	5,390,921
Q'land	*	...	...	...	...	*	120,045	152,188	226,706	256,860
S. Aus.	*	1,146	...	...	...	*	341,019	427,588	363,564	346,259
W. Aus.	284	340	581	548	2,595	23,322	10,607	17,591	17,659	10,867
Tas.† ...	...	...	...	...	...	...	...	...	...	...
C'wth.	†1,147,608	1,302,809	1,522,398	1,623,679	1,862,178	†8,862,417	9,546,955	10,989,809	9,959,650	10,950,775

\* Information not available. † Exclusive of Queensland and South Australia. ‡ There are no tobacco factories in Tasmania. || Exclusive of South Australia.

21. **Woollen and Tweed Mills.**—The manufacture of woollens and tweeds was established in Australia at a comparatively early period in its industrial history, the first record in Victoria dating back to 1867. The following table, which gives particulars of the mills in each State during the year 1910, shews that the industry is now well established :—

### WOOLLEN AND TWEED MILLS, 1910.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories ... ..	8	9	2†	2	...	4	25
" employees ... ..	748	1,657	175	172	...	278	3,030
Actual horse-power of engines employed ...	781	2,041	156	165	...	100	3,243
Approx. value of land and buildings ...	£ 84,213	133,975	9,499	6,000	...	16,100	249,787
" plant and machinery ...	£ 109,473	247,791	30,144	10,763	...	38,750	436,921
Total amount of wages paid during year ...	£ 44,349	98,573	8,433	9,344	...	11,695	172,394
Value of fuel used ... ..	£ 3,927	13,247	*	*	...	1,375	20,033
Value of raw material worked up ...	£ 81,744	210,545	*	*	...	23,236	347,266
Total value of output ... ..	£ 154,757	426,336	*	*	...	48,795	638,297
Value added in process of manufacture ...	£ 73,013	215,791	*	*	...	25,499	346,071

\* As there are only two factories each in Queensland and South Australia particulars of output, etc., are not disclosed, but are added in with the total for the Commonwealth. † One woollen and tweed mill, and one cotton ginning establishment.

(i.) *Progress of Industry, 1906 to 1910.* The progress of woollen and tweed manufactures during the last five years is shewn in the following table for each State in which mills were in operation :—

### DEVELOPMENT OF WOOLLEN MILLS IN AUSTRALIA, 1906 to 1910.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	5	5	5	7	8	338	395	455	628	748	£ 36,400	£ 39,433	£ 43,933	£ 82,117	£ 109,473
Vic.	9	9	9	9	9	1,434	1,589	1,757	1,717	1,657	236,988	259,740	263,100	265,008	247,791
Q'land.	1	1	1	2	2	117	119	97	165*	175	24,500	19,364	19,364	*28,634	30,144
S. Aus.	2	2	2	2	2	155	149	145	177	172	†	13,850	11,200	10,763	10,763
W. Aus.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tas.	4	4	4	4	4	274	257	263	278	278	42,200	45,413	33,250	37,250	38,750
C'wlth.	21	21	21	24	25	2,318	2,509	2,717	2,965	3,030	†	377,800	370,847	423,772	436,921

\* Including one cotton ginning establishment. † Not available.

(ii.) *Quantity and Value of Production, 1910.* The production of the woollen mills of Australia consists chiefly of tweed cloths, flannels, and blankets, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not available for publication. The total length of tweed and cloth manufactured was about 2,000,000 yards, valued at, approximately, £250,000. In New South Wales 804,146 yards of tweed and cloth, in Victoria 890,281 yards, and in Tasmania 37,184 yards were manufactured. The production of flannel in the Commonwealth in 1910 amounted to about 5,000,000 yards, valued at £260,000, and of blankets, shawls, and rugs to the number of 532,000, valued at £128,000.

No cotton spinning or weaving or linen weaving is carried on in Australia. Cotton ginning has been carried on at periods far apart in the northern States, and a mill was lately reopened at Ipswich in Queensland.

22. **Boots and Shoes.**—Among the manufactures of Australia the boot and shoe industry holds an important place both in respect to the employment afforded by it and the range of its output. The following table shews particulars of this industry for each State during the year 1910 :—

## BOOT AND SHOE FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ... ..	106	144	30	23	10	24	337
" employees ... ..	4,475	6,832	1,120	882	203	298	13,810
Actual horse-power of engines employed	800	991	231	171	26	29	2,248
Approx. value of land and buildings	£ 212,222	188,334	38,743	58,470	10,205	19,831	527,805
" plant and machinery	£ 149,228	186,195	34,651	30,079	6,100	4,565	360,818
Total amt. of wages paid during year	£ 331,985	458,997	76,590	68,262	18,609	16,932	968,375
Value of fuel used ... ..	£ 4,777	7,295	858	1,352	303	114	14,699
Value of raw material worked up	£ 693,651	963,110	148,989	134,105	35,307	26,542	2,000,704
Total value of output ... ..	£ 1,174,329	1,620,179	250,658	234,205	63,546	53,255	3,396,173
Value added in process of manufacture	£ 480,678	657,069	101,669	101,100	28,239	26,713	1,396,468

(i.) *Progress of Industry, 1906 to 1910.* The progress of the industry in the last five years is shewn in the following table:—

## DEVELOPMENT OF BOOT AND SHOE FACTORIES, 1906 to 1910.

State.	No. of Factories.					No. of Persons Employed.					Approximate Value of Plant and Machinery.				
	1906	1907	1908	1909	1910	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
N.S.W.	102	102	105	102	106	4,767	4,786	4,650	4,460	4,475	122,580	131,884	134,575	141,822	149,228
Victoria	134	139	139	136	144	5,703	6,303	6,348	6,894	6,832	99,042	122,347	123,204	129,411	136,195
Q'land.	26	32	27	25	30	1,015	1,134	1,094	1,135	1,120	20,592	22,078	26,652	25,712	34,661
S. Aust.	17	21	24	23	23	1,212	1,162	1,077	1,069	832	*	23,352	30,748	29,644	30,079
W. Aust.	12	12	10	11	10	236	249	185	204	203	6,626	7,232	5,967	6,735	6,100
Tas. ...	15	23	23	19	24	323	281	252	261	298	6,713	4,859	3,165	4,410	4,565
C'wealth	309	329	328	315	337	13,256	13,915	13,606	14,023	13,810	255,553†	316,752	324,331	337,734	360,818

\* Information not available. † Exclusive of South Australia.

(ii.) *Value and Quantity of Production, 1910.* The number and value of boots and shoes, and slippers made at factories in each State during the year 1910, are shewn in the following table:—

## PRODUCTION OF BOOT AND SHOE FACTORIES, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Boots and shoes ... Pairs	3,820	4,847	800	824	208	159	10,658
Slippers ... Pairs	503	191	49	32	1	16	792
Uppers ... Pairs	125	15	12	11	3	3	169
VALUE.							
Boots and shoes ... £	1,093,273	1,590,000	237,684	220,858	61,101	47,782	3,250,698
Slippers ... £	44,482	26,500	4,092	4,078	96	1,125	80,373
Uppers ... £	22,634	2,500	3,109	1,984	810	896	31,933

23. **Hats and Caps.**—The manufacture of hats and caps is now well established in the Commonwealth. The position of the industry in the several States in 1910 is shewn in the following table:—



## HAT AND CAP FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wth.
Number of factories ... ..	29	42	5	2	1	...	79
" employees ... ..	1,398	1,890	147	166	5	...	3,606
Actual horse-power of engines employed	281	358	20	56	...	...	715
Approx. value of land and buildings £	87,922	86,118	9,950	4,764	260	...	189,014
" plant and machinery £	52,057	43,447	7,591	5,064	30	...	108,189
Total amount of wages paid during year £	70,905	124,635	7,672	10,737	120	...	214,069
Value of fuel used ... ..	£ 2,847	5,932	219	*	*	...	9,867
Value of raw material worked up £	122,978	174,872	9,659	*	*	...	318,834
Total value of output ... ..	£ 236,243	376,154	23,619	*	*	...	662,523
Value added in process of manufacture £	113,265	201,282	13,960	*	*	...	343,689

\* As there are only two factories in South Australia and one in Western Australia, details relating to output, etc., are not available for separate publication; the amounts, however, are included in the totals for the Commonwealth.

(i.) *Progress of Industry, 1906 to 1910.* As appears from the following table, which shows the progress of this industry in the States in which it was carried on during the years 1906 to 1910, there has been a considerable investment of capital in these establishments in New South Wales and Victoria during recent years, and the industry is now in a flourishing condition in both these States.

## DEVELOPMENT OF HAT AND CAP FACTORIES, 1906 to 1910.

State.	Number of Factories.					No. of Persons employed.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	23	22	26	30	29	1,036	1,094	1,221	1,349	1,398	£ 32,750	£ 35,653	£ 34,315	£ 39,966	£ 52,057
Vic.	32	33	34	35	42	1,319	1,404	1,520	1,688	1,890	24,588	28,452	29,650	35,427	43,447
Q'land.	4	3	4	5	5	122	140	129	173	147	6,083	7,142	7,662	7,420	7,591
S. Aust.	2	1	1	2	2	50	60	57	144	166	*	3,180	3,721	5,182	5,064
W Aust.	...	...	...	1	1	...	...	...	7	5	...	...	...	50	30
C'wth.	61	59	65	73	79	2,527	2,698	2,927	3,361	3,606	63,421†	74,427	75,346	88,045	108,189

\* Information not available. † Exclusive of South Australia.

(ii.) *Quantity and Value of Production, 1910.* Particulars regarding the quantity and value of the production of hat and cap factories in each State are not available for separate publication. The total value of hats and caps made in Australia in 1910 was £648,770.

24. *Coach and Wagon Building Works.*—This industry forms the principal branch of manufacture in Class XI. (see § 1, 3 above). The subjoined table gives particulars of factories in this branch of industry in each State during the year 1910. The returns include establishments for the manufacture of wheels, spokes, etc.

## COACH AND WAGON BUILDING WORKS, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wth.
Number of factories ... ..	249	260	84	97	36	33	759
" employees ... ..	2,563	2,720	757	1,052	341	216	7,649
Actual horse-power of engines employed	567	344	167	341	100	15	1,634
Approx. value of land and buildings £	279,793	214,837	56,918	98,420	30,990	17,520	698,478
" plant and machinery £	58,665	48,615	20,774	26,347	10,733	2,173	167,307
Total amount of wages paid during year £	215,204	190,752	57,284	81,934	38,017	13,414	596,605
Value of fuel used ... ..	£ 7,582	7,672	831	3,186	2,101	473	21,845
Value of raw material worked up £	224,052	217,409	56,033	90,560	44,164	11,239	643,457
Total value of output ... ..	£ 558,060	522,138	163,585	232,135	97,051	31,018	1,603,957
Value added in process of manufacture £	334,008	304,729	107,552	141,575	52,897	19,779	960,530

25. **Furniture and Cabinet Making and Billiard Table Making.**—These industries constitute the principal manufactures in Class XIII. (see § 1, 3 above). The following table gives particulars for 1910:—

**FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE  
MAKING, 1910.**

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories ... ..	122	148	56	21	21	10	378
employees ... ..	2,352	1,726	902	762	276	196	6,214
Actual horse-power of engines employed	636	337	263	486	103	56	1,881
Approx. value of land and buildings	£ 199,439	180,941	67,555	38,570	30,990	16,870	534,365
plant and machinery	£ 33,754	29,414	18,103	23,351	4,132	2,447	111,201
Total amount of wages paid during year	£ 216,689	150,811	74,605	67,827	30,686	13,564	554,182
Value of fuel used ... ..	£ 3,038	2,107	1,546	1,913	640	157	9,401
Value of raw material used ...	£ 196,062	199,239	75,845	59,669	37,660	11,671	580,146
Total value of output ... ..	£ 502,314	419,600	198,650	158,022	77,888	31,556	1,388,030
Value added in process of manufacture	£ 306,252	220,361	122,805	98,353	40,228	19,885	807,884

26. **Electric Light and Power Works.**—Particulars of the electric light and power works of the Commonwealth in the year 1910 are given in the subjoined table. In South Australia there is only one electric light and power station. Particulars for that State are therefore not disclosed in regard to output.

**ELECTRIC LIGHT AND POWER WORKS, 1910.**

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories ... ..	99	16	6	1	19	10	151
employees ... ..	784	523	91	174	233	374	2,179
Actual horse-power of engines employed	49,718	13,962	4,700	5,050	15,110	5,300	93,840
Approx. value of land and buildings	£ 387,354	180,855	26,899	47,764	67,342	18,775	728,989
plant and machinery	£ 1,176,920	645,333	69,223	292,910	461,826	143,202	2,789,454
Total amount of wages paid during year	£ 107,021	62,266	12,245	22,438	43,331	18,874	266,175
Value of fuel used ... ..	£ 173,183	43,358	6,065	*	56,301	24,329	313,256†
Total value of output ... ..	£ 784,790	231,604	51,948	*	206,297	52,856	1,327,489†

\* Not available for publication.

† Exclusive of South Australia.

27. **Gas and Coke Works.**—There are gas works in operation in nearly all the chief towns in the Commonwealth. In New South Wales there are thirteen and in Queensland four coke factories which are worked as separate industries. The subjoined table gives particulars of gas and coke works in each State:—

**GAS AND COKE WORKS, 1910.**

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories ... ..	57	47	19	3	4	3	133
employees ... ..	1,386	1,421	390	358	88	134	3,777
Actual horse-power of engines employed	2,556	740	118	129	36	24	3,603
Approx. value of land and buildings	£ 557,183	470,023	123,948	5,876	35,829	27,300	1,220,159
plant and machinery	£ 855,242	1,249,673	429,559	288,000	68,045	154,011	3,044,530
Total amount of wages paid during year	£ 186,214	199,308	50,726	42,162	13,994	17,585	509,989
Value of fuel used ... ..	£ 59,289	1,479	3,695	418	2,001	323	67,206
Value of raw material used ...	£ 448,685	212,092	26,552	49,675	12,426	12,000	761,430
Total value of output ... ..	£ 1087,074	733,910	173,613	145,503	40,559	41,596	2,222,255
Value added in process of manufacture	£ 638,389	521,518	147,061	95,828	28,133	29,596	1,460,825

\* Including 13 coke factories.

† Including 4 coke factories.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1910 :—

### PRODUCTION OF GAS AND COKE WORKS, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
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#### QUANTITY.

Gas made	... 1000 cub. ft.	3,854,826	2,476,528	524,118	454,599	92,793	144,533	7,547,397
Coke	... ... tons	441,936	139,423	36,515	19,506	4,972	7,391	649,743

#### VALUE.

Gas	... ... £	669,269	625,000	145,009	115,951	28,026	35,528	1,618,783
Coke	... ... £	280,219	85,000	22,141	21,534	9,210	6,068	424,172

#### COAL USED.

Coal	... ... tons	*726,902	235,532	70,431	46,716	7,976	13,174	1,100,731
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\* Also 51,644 tons shale.

## SECTION XIV.

## WATER CONSERVATION AND IRRIGATION.

## § 1. Water Supply Works.

1. **General.**—In every country in which droughts are recurrent, there are few problems the solution of which is of greater importance than that of an adequate system of water conservation. Much has been done in the Commonwealth so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water works will be found herein, viz., in the section dealing with "Local Government."

2. **The Goldfields Water Supply of Western Australia.**—The scheme by which the Government of Western Australia undertook to provide a permanent supply of water for the population on the eastern goldfields of that State comes properly under the heading of "Water Supply Works."

The Act under which the works were constructed was introduced in Parliament by Sir John Forrest, G.C.M.G., then Premier of Western Australia, in September, 1896, and provided for an expenditure of £2,500,000 and a daily supply of 5,000,000 gallons. The works, designed by the late Mr. C. Y. O'Connor, Engineer-in-Chief of the State, were originally known as the "Coolgardie Water Scheme," but are now officially called the "Goldfields Water Supply." The first construction work in connection with the scheme was commenced early in 1898, and the water was delivered in Kalgoorlie in January, 1903. The source of supply is the Helena River, in the Darling Ranges, where, at about 18 miles from Perth, an impounding reservoir, 760 acres in extent, with a catchment area of 569 square miles, has been constructed. From the impounding reservoir the water is pumped through a steel main of the locking-bar type, 30 inches in internal diameter, by a series of eight pumping stations located at intervals along the main. Each pumping station, except No. 1, which draws direct from the reservoir, is provided with a suction tank which receives the water pumped by the preceding station. The last pumping station delivers the water into a main service reservoir of 12 million gallons capacity, situated at Bulla Bulling at a height of 1290 feet above the lowest off-take from the Helena Reservoir, and distant  $307\frac{1}{2}$  miles therefrom. From the main service reservoir the water flows by gravity to Kalgoorlie, a further distance of 44 miles; the total length of the 30 in. main being  $351\frac{1}{2}$  miles. The water is distributed to the various townships and to the mining centres from service reservoirs, and a considerable area of agricultural country is also supplied by branch pipe lines from the main conduit. The area of operations embraces 16,000 square miles, the total length of the water area being approximately 380 miles. The cost of the original works, including expenses of raising loans, was £2,866,454, and of supplementary works £386,247, making a total of £3,252,701. The Mundaring reservoir cost £249,000. Its capacity is 4600 million gallons, and its surface area at full supply level 672 acres. The height of the wall above the river bed is 100 ft.; length of wall, 757 ft.; width of wall at bottom, 85 ft.; at top, 11 ft.; and when the reservoir is full the water runs back for a distance of seven miles.

During the financial year 1910-11 the total consumption amounted to 1,058,900,000 gallons, an increase on the previous year of 57,200,000 gallons. The gross revenue was £237,668, and the working expenses £70,972, leaving a surplus available towards interest and sinking fund of £166,696. The outlay for interest and sinking fund charges in respect of supplementary capital borrowed on debentures absorbed £21,261, leaving £145,435 payable to the State Treasury. During the financial year the State Treasury paid £171,050 interest and sinking fund on State loans in respect of these works, leaving a net deficiency of £25,615.

**3. The Mines Water Supply Branch.**—Prior to the commencement of the Goldfields Water Supply Scheme, works of different kinds were carried out by the Government in order to afford temporary relief to the population on the goldfields. These works comprised shallow and artesian boring, conservation and protection of water in natural and artificial reservoirs, sinking of wells, erection of condensers, etc. About 2000 shallow bores have found fresh water, and a few hundred, salt water, which, however, is serviceable for battery purposes. Administratively, the goldfields area is divided into three water supply districts—Coolgardie, Murchison, and Pilbara. It has been the policy of the department charged with the supervision of water supply works, viz., the Mines Department, to lease watering stations wherever that could be done to advantage, and from twenty to thirty leases are generally executed in the course of a year. The tanks which have been constructed by the department vary in size from 200,000 gallons to 37,500,000 gallons (at Niagara).

## § 2. Artesian Wells.

**1. General.** (i.) *The Great Australian Artesian Basin.* Although there are some artesian wells outside this area, yet, in speaking of the "Great Australian Artesian Basin," the area is understood which includes (a) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (b) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (c) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shewn approximately by map in Section XXVI., Local Government), is said to be the largest yet discovered, and is about 569,000 square miles, of which 376,000 square miles are in Queensland, 110,000 square miles in South Australia, and 83,000 square miles in New South Wales. The area of the intake beds is estimated at 60,010 square miles, viz., 50,000 square miles in Queensland and 10,010 square miles in New South Wales. The basin is what is technically known as a one-sided or half-basin, the intake beds outcropping along its eastern and north-eastern sides only, while the remainder of the water-bearing formation is hidden under the superficial deposits forming the plains of the interior of the States. Although it has not been definitely decided whether the basin has outlets towards the Gulf of Carpentaria in the north, and towards the Great Australian Bight or towards Lake Eyre in the south, there is a preponderance of opinion and strong evidence in favour of the existence of such outlets, an opinion which receives strong support from the maps published by the Geological Department of Queensland, which shew an apparent dip in the water-bearing strata towards the Gulf of Carpentaria in the north and towards Lake Eyre and the Great Australian Bight in the south. It is estimated that at present there are about 1650 bores tapping the basin in the three States.

(ii.) *The Western Australian Basin.* The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the

Great Australian Bight, form an artesian water area. But where boring operations have been undertaken the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which so far have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the coastal area to the west of the Darling Ranges artesian boring has, on the other hand, been carried on successfully for many years.

(iii.) *The South Australian-Victorian Basin.* In August, 1910, a report was issued by the Government Geologist of South Australia on the geology of the country south and east of the Murray River, with special reference to subterranean water supply in wells and bores along the Pinnaroo and Bordertown railways. The tertiary formation in the district under consideration occupies the western portion of a vast basin or depression, of which the greater part extends eastward into Victoria and northward into New South Wales. This basin is bounded on the west by the azoic and palæozoic rocks of the Mount Lofty and other ranges, extending northwards from near the mouth of the Murray to the Barrier Ranges, and on the east and north-east by the ranges of Victoria and New South Wales. This tertiary water-basin is occupied by a succession of sedimentary formations, both porous and impervious. It is of interest to note that the waters of the Murray River are partly supplied by influx from the water-bearing beds of this basin; this is proved by the fact that, at low water, springs are observed at certain places flowing into it from beneath the limestone cliffs from Pyap Bend downwards. Similar springs must exist along the courses of other branches of the River Murray system, where they cut through the tertiary formation.

(iv.) *Plutonic or Meteoric Waters.* While it has long been held that the Australian artesian basin is a typically-formed one, and that its intake beds are as described above, a theory has been recently advanced (viz., by Professor Gregory, <sup>1</sup> formerly of Melbourne, but now of Glasgow University), that the water, although called artesian, is not impounded rain-water, or *meteoric* water at all, but is derived from the older rocks, i.e., that it is *plutonic* in character. If this were so, and if the water contained in the basin were merely such as occurs in the molten lava from volcanoes or imprisoned in the solidified quartz of granites, we should, of course, be rapidly exhausting our supply. He founds his main arguments on (a) the amount of friction caused by the flow of water through the minute interstices between the sand grains, i.e., on the loss of its hydrostatic head before the bores are reached; (b) on anomalies in temperature and pressure; (c) on the chemical analyses of some of the waters; and (d) on evaporation measurements in Central Australia. He suggests the pressure of overlying rock, and gas pressure caused by the internal heat of the earth, as causes of the flow from the bores.

This new theory has recently been replied to at length by the Government Geologist of New South Wales.<sup>2</sup> While this Year Book is hardly the place to enter at length upon arguments of a purely scientific nature, it may be said that Mr. Pittman avers that "many of Professor Gregory's statements appear to be in opposition to observed facts." In regard to the loss of hydrostatic head, he quotes the opinion of the United States Geological Survey in regard to bores in Kentucky, and the experience in connection with the Grenelle bore in Paris. So far as temperature is concerned, he shews that it would be illogical to contend that, because some Australian bores give higher rates of increase than the average results of a number of ascertained bores and tunnels in other parts of the world, the water must be plutonic and not meteoric. In regard to pressure, stress is laid on the more accurate results obtained with the dumpy level than with the aneroid, and it is shewn how accurately the height to which the water would rise has been

1. See J. W. Gregory, F.R.S., D.Sc.: "The Dead Heart of Australia"; London, John Murray, 1906.

2. E. F. Pittman, A.R.S.M., Government Geologist of New South Wales: "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory." (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907).

predicted in many localities. It is also pointed out that the isopotential lines as laid down are tentative, as information in regard to many private wells is unreliable. The question of the chemical constituents of artesian water is dealt with at length, and it appears that instead of decreasing from east to west, as stated by Professor Gregory, the salinity of the water actually increases, and that some of the wells in the eastern district mentioned by the latter as being particularly rich in saline matter are actually outside the artesian basin altogether.

In regard to evaporation measurements in Central Australia, Mr. Pittman holds that these do not affect the question at issue at all, as the water does not enter the porous beds in Central Australia, but on the flanks of the Dividing Range, where the rainfall is copious. The theories of the pressure of overlying rock and of gas pressure are not accepted by him.

The strength of the argument seems to be unquestionably in favour of the older theory of meteoric water, as upheld by Mr. Pittman. Professor Gregory has made a rejoinder entitled "The Flowing Wells of Central Australia," which appeared in *The Geographical Journal* for July-August, 1911.

(v.) *Particulars of Artesian and Sub-artesian Bores, 1910.* The following table gives particulars of artesian and sub-artesian bores in each State and in the Commonwealth up to the end of the year 1910:—

**COMMONWEALTH AND STATES.—PARTICULARS OF ARTESIAN AND SUB-ARTESIAN BORES, 1910.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.†	W. Aust.	Tas.	C'wlth.
Bores existing ... No.	445	31	1,711‡	73	79	...	2,339†
Total depth bored ... feet	724,274	8,873	1,762,500	69,432	79,600	...	2,644,679
Daily flow ... 000 gals.	67,556†	*	516,591	8,806	27,938	...	620,891
Depth at which artesian water was struck—							
Maximum ... feet	4,341	436	5,045	4,850	3,011	...	5,045
Minimum ... feet	46	131	10	130	56	...	10
Temperature of flow—							
Maximum ... ° Fahr.	139	*	202	208	140	...	208
Minimum ... ° Fahr.	70	*	81	82	60	...	60

\* Not available. † Government bores only. ‡ See footnotes to table at bottom of page 587.

2. **New South Wales.**—Artesian boring in New South Wales dates from 1879, when a private bore was put down on the Kallara pastoral holding, between Bourke and Wilcannia. The first Government bore was that at Goonery, on the Bourke-Wanaaring road, completed in 1884. At the end of 1910, out of 445 known artesian bores in New South Wales, 189 were Government bores.

The distribution of these bores was as follows:—

**NEW SOUTH WALES ARTESIAN BORES ON 31st DECEMBER, 1910.**

Particulars.	State.	Private.	Total.
Bores existing ... No.	189	256	445
Total depth bored ... feet	358,632	365,642	724,274
Daily flow ... gallons	67,556,515*	†	†
Depth at which water was struck—			
Maximum ... feet	4,341	3,550	...
Minimum ... "	89	46	...
Temperature of flow—			
Maximum ... ° Fahr.	139	130	...
Minimum ... "	70	71	...

\* Excluding the flow from eighteen bores, the particulars of which are not available.

† Not available.

Of the wells at the end of 1911, the depth is stated in 487 cases, and it appears that only 21 wells were less than 500 feet deep; while 88 ranged from 500 to 1000 feet; 239 from 1000 to 2000 feet; 102 from 2000 to 3000 feet; 32 over 3000 feet; and five over 4000 feet. There is a preponderance of wells from 1000 to 2000 feet in depth, but neither the shallow wells under 500 feet, nor the very deep wells over 3000 feet are so numerous in proportion as in Queensland. The two deepest wells in New South Wales are those at Boronga, in the County of Stapylton, with a depth of 4341 feet and a daily outflow of 1,062,133 gallons; and at Dolgelly, in the Parish of Careunga, in County Stapylton, with a depth of 4086 feet, and an outflow of 622,185 gallons per day. The largest outflow is stated to be that at the Boobora bore, in the County of Stapylton, which yields 1,133,300 gallons a day, and has a depth of 3225 feet.

The Zetz Spa, much used as a mineral water in New South Wales, comes from Ballimore, near Dubbo.

It may be said that the cost of artesian wells works out at an average of about 20s. per lineal foot; it depends, of course, upon the depth to which boring operations have to be extended, and on the accessibility of the bore to a railway station. The practice is to line the bore with three strings of casing, ten, eight and six inches in diameter respectively. The ten and eight inch strings are inserted as far as may be considered necessary, and the six-inch string generally taken to the bottom of the bore. Recent contract prices per lineal foot for a bore complete are as follows:—To 1000 feet, 27s. per foot; 1000 to 1500 feet, 17s. 9d.; 1500 to 2000 feet, 18s. 3d.; 2000 to 2500 feet 19s. 3d.; 2500 to 3000 feet, 21s. 3d.; 3000 to 3500 feet, 23s. 9d.; 3500 to 4000 feet, 30s. The increased cost per lineal foot for the first 1000 feet is owing to the insertion of the three strings of casing.

**3. Victoria.**—Victoria lies altogether outside the Great Australian Artesian Basin, and as water is obtainable in most parts of the State at shallow depths, there has not been much occasion for artesian boring. As early as 1884, however, an artesian well was bored at Sale, which for a number of years gave a supply of about 100,000 gallons per day until, either through corrosion of the casing or by choking up with sand from below, the flow ceased. In 1905 a new bore was therefore put down, which at a depth of 277 feet yielded sufficient water to fill Lake Guthridge, a local depression. But as the water was impure, and contained too much sulphuretted hydrogen, boring operations were continued to 520 feet, when the lowering of the casing shut off the supply of water. A further bore was then put down at some distance from the first, and this, at a depth of 238 feet, yielded a fresh and clear water supply, which at present is stated to be about 145,000 gallons per day. Further trouble, however, has been experienced owing to failure of casing and a fresh bore is being prepared.

In the late eighties a number of bores were put down in the North-Western part of the State varying from 200 to over 2000 feet in depth, but without any notable success. In 1897 a Board reported on boring for artesian water supply in the Mallee country but this report was adverse except as regards the extreme northern portion thereof. In 1906 eight bores were put down on the Overnewton Estate, Maribyrnong, to depths varying from 147 to 272 feet; small supplies of good and medium water for stock purposes were obtained, but only one of the wells yielded water fit for domestic purposes. In 1908 boring was commenced in the Mallee country near the Border east of Pinnaroo in South Australia, and a line of bores from the Border to Kow Plains has proved the existence of a large sheet of underground water. Altogether forty-two bores have been sunk, thirty-eight of which have been successful. Their depths vary from 150 to 475 feet, and the water rises to within from 200 to 7 feet of the surface. In one instance the bore flows, the water rising to four feet above the surface. The fresh water extends as far east as the 142nd meridian and its northern limits are not yet ascertained. Information as to the geological formation of this district is given on page 584 preceding.



At the end of 1910 the number of existing Government bores in use in Victoria was 31, from which supplies are obtained by pumping. The total depth bored amounted to 8873 feet, while the maximum and minimum depths at which water was struck were 436 and 131 feet respectively.

4. **Queensland.**—The publication of the reports issued annually by the Hydraulic Engineer of Queensland has been suspended during the last eight years, and these reports are only available to 30th June, 1902. At that date the following bores were in existence :—

**QUEENSLAND ARTESIAN BORES ON 30th JUNE, 1902.**

Sunk by—	Artesian Flows.	Sub-Artesian Flows.	Pumped Supplies.	In Progress, Abandoned, Uncertain.	Total.
Water Supply Department (trial borings)	22	...	3	24	49
Railway Department ... ..	2	...	2	13	17
Local governing authorities ... ..	10	...	15	5	30
Private owners ... ..	530	9	131	168	838
Total ... ..	564	9	151	210	934

The depth of 850 of these wells is given, and it appears that there were 229 less than 500 feet deep, 200 from 500 to 1000 feet, 231 from 1000 to 2000 feet, 124 from 2000 to 3000 feet, and 66 over 3000 feet. The deepest well was one known as Bimerah Run No. 3, Whitewood, lying between the Barcoo and Thomson Rivers; this had a depth of 5045 feet, and was stated to yield 70,000 gallons daily. This flow is, of course, a comparatively small one, many wells yielding, when uncontrolled, from one to three million gallons a day. A well at Cunnamulla is stated to have a daily flow, when uncontrolled, of no less than 4,500,000 gallons. The waters of many of the wells have been analysed, and some found suitable for wool-scouring only, others are suitable for watering stock but not for irrigation, owing to the presence of alkali; others again serve for both stock and irrigation, while some, such as those containing sulphuretted hydrogen, are not of any use. Water fit for stock may generally be said to be "safe" for domestic purposes in spite of its slightly mineral taste. The wells yielding the mineral water known as "Helidon Spa," which is much in use in Queensland and New South Wales, are shallow wells from 60 to 200 feet in depth.

The following table shews particulars as to Queensland bores at the end of June, 1911 :—

**QUEENSLAND ARTESIAN BORES ON 30th JUNE, 1911.**

Particulars.	State and Local Authorities.	Private.	Total.
Bores existing ... .. No.	268*	1,443†	1,711
Total depth bored ... .. feet	188,140	1,574,360	1,762,500
Daily flow ... .. gallons	35,562,200	481,029,000	516,591,200
Depth at which artesian water was struck—			
Maximum ... .. feet	4,256	5,045	...
Minimum ... .. "	614	10	...
Temperature of flow—			
Maximum ... .. °Fahr.	173	202	...
Minimum ... .. °Fahr.	92	81	...

\* 54 flowing, 45 pumped, 151 abandoned or uncertain.

† 731 flowing, 284 pumped, 428 abandoned or uncertain.

5. **South Australia.**—The information about artesian wells is somewhat meagre. Early in 1908 a list of twenty-five of the principal Government bores was published, of which four were under 1000 feet in depth, twelve from 1000 to 2000 feet, two from 2000 to 3000 feet, and seven over 3000 feet. The deepest flowing well was at Goyder's Lagoon, on the Hergott to Birdsville route, measuring 4580 feet, and yielding 600,000 gallons per day. A bore at Patchawarra, 35 miles north of Innamincka, was in September, 1909, down to 4863 feet, but had not at that depth struck the subterranean water. The maximum flows, viz., 1,250,000 gallons and 1,000,000 gallons daily, occurred at Coward Springs and Dulkaninna respectively.

The following table shews particulars as to South Australian bores at the end of December, 1910:—

SOUTH AUSTRALIAN BORES, 1910.

Particulars.	Artesian.	Sub-artesian.	Total.
Bores existing ... ..	26	47	73
Total depth bored ... .. feet	47,375	22,057	69,432
Daily flow ... .. gals.	8,806,000	†	...
Depth at which water was struck—			
Maximum ... .. feet	4,850	2,002	...
Minimum ... .. feet	233	130	...
Temperature of flow—			
Maximum ... .. °Fahr.	208	†	...
Minimum ... .. °Fahr.	82	†	...
Total cost of construction of bores up to end of year ... ..	£138,042	£66,995	...
Expenditure during year on boring operations ... ..	£11,294	†	...

† Not available.

(i.) *Bores along Bordertown Railway.* The sinking of bores across the Ninety-mile Desert between the Murray and the Victorian boundary was commenced in 1886 at Coonalpyn; with the exception, however, of salt water at 55 ft., none was reported to have been struck. Ki Ki bore was sunk in 1887 and at 361 ft. a good supply of water fit for stock was struck. Tintinarra bore was sunk in 1887; it was artesian when first tapped. The water was found to be fit for locomotive engines and is still used for that purpose. The bore at Emu Flat was also sunk in 1887.

The following table gives particulars relating to bores along the Bordertown railway. In all these bores water was found in porous beds of Eocene (Tertiary) age.

SOUTH AUSTRALIA.—PARTICULARS OF BORES ALONG BORDERTOWN RAILWAY, 1910.

Bore.	Elevation of Surface above Sea-level.	Depth of Water.	Depth of Water-level from Surface.	Quality: Salts and Matter per Gallon.	Supply per diem.	Remarks.
	Ft.	Ft.	Ft.		Gallons.	
Cooke's Plains	17	15	...	Salt	...	Bottomed granite, 218 feet.
Ki Ki ...	68	{ 73 } 361	68	Brackish	{ 16,800 } 16,800	Bottomed decomposed slates, 450 ft.
Tintinarra ...	62	251	(Rises to surface).	Fresh (81 grs.)	4,300	...
Emu Flat ...	100	{ 52 } 166	28	Fresh (98 grs.)	8,500	At 60 ft. from surface 312,000 gals. per diem.
Keith ...		264				

(ii.) *Bores along and near Pinnaroo Railway Line.* The subjoined table gives particulars of some of the principal bores in the Pinnaroo country. In 1904 the first bore was sunk in this district at Cotton; numerous successful bores have since been put down by the Public Works Department, and subsequently by the residents of the district. Several wells, ranging in depth from 55 ft. to 221 ft., have also been sunk in this district.

**SOUTH AUSTRALIA.—PARTICULARS OF PRINCIPAL BORES NEAR PINNAROO  
RAILWAY LINE, 1910.**

Bore.	Elevation of Surface above Sea Level.	Depth of Water.	Depth of Water Level from Surface.	Quality.	Salts per Gallon.	Supply per diem where ascertained.
	Feet.	Feet.	Feet.		Grains.	Gallons.
Sherlock ...	53	270	15	Fresh	196.24	...
Geranium ...	240	140	140	"	96.05	14,400
Cotton ...	300	190 and 800	170	"	81.16	30,000*
Parilla ...	340	207 and 250	207	"	...	...
Bews ...	350	227	193	"	...	10,800
Clay Pan ...	340	225	203	"	...	13,440
Kow Plains...	344	140 and 210	167	"	73.79	...
Fuller ...	100	72 and 340	43 and 29	{ Brackish } Fresh	101	...
Gosden ...	100	327	27		...	48,000

\* Bottomed on granite at 839 feet.

The latest Government bore is situated  $7\frac{1}{2}$  miles south of Brown's well, near the terminus of the proposed railway from Taillem Bend. The depth of this bore is 220 ft., and the water, which is in large supply, rises to within 52 ft. of the surface. The water is fresh, containing  $\frac{1}{4}$  oz. salts and other solid matter per gallon.

6. **Western Australia.**—As already stated, no artesian water has been found east of the Darling Ranges, although a large number of shallow bores yield either fresh or salt water.

At the end of the year 1910 the total number of bores west of the Darling Range was 79, of which 47 were Government bores. The total depth bored is given as 48,349 feet in Government and 31,251 feet in private bores. The total cost of construction of State bores at the end of the year 1910 was about £83,000, of which amount £13,000 was spent in 1910. The total daily flow of the Government bores is stated as 15,532,310 gallons, and of private bores as 12,406,400 gallons. The maximum and minimum depths of State bores were 3011 feet and 56 feet respectively, and the maximum and minimum temperatures 140° and 60° Fahrenheit. The maximum outflow, 1,167,000 gallons per day, is said to be obtained from a well at Guildford.

### § 3. Irrigation Plants.

1. **General.**—Various causes have combined to keep proposals for irrigation works on a large scale before the Parliaments of several of the States for a number of years without any very tangible results, except in the case of New South Wales, Victoria, and South Australia. The absence of the example of any country which has constructed such works under similar climatic and labour conditions, the very partial success of some of the smaller works undertaken in Australia, and the abundant supply of artesian water obtained during the last twenty years in parts of the continent most liable to droughts, have all tended to delay the undertaking of large works.

2. **New South Wales.**—(i.) *Irrigation Trusts.* The first action by the Government of this State for the establishment of irrigation settlements was taken under Acts of Parliament, which authorised the formation of irrigation trusts in the vicinity of Wentworth in 1890, Hay in 1892, and Balranald in 1893. The Wentworth Trust controlled an area of 10,600 acres, but has been dissolved and its powers assumed by Government. A pumping plant has been provided and channels laid out for the irrigation of an area of 1500 acres, of which 1000 acres are at the present time under successful occupation, largely for the production of horticultural crops and a small amount of lucerne. The original area under the Hay Trust was 12,847 acres, but in 1896 this was reduced to 3000 acres. The pumping plant and channels provide for the irrigation of 900 acres, which are under occupation, principally in connection with the growth of fodder crops for dairying, a small area being under horticultural crops. No works for the supply of water have yet been carried out by the Balranald Trust, which controls an area of 1000 acres. It is improbable that any irrigation will be provided in this area in the near future.

(ii.) *Private Irrigation.* Irrigation by private individuals is almost entirely carried out by pumping plants licensed under the provisions of the Water Rights Act. The largest plants draw their supplies from the River Murray for irrigating areas of from 600 to 700 acres of lucerne grown for stock feeding purposes.

(iii.) *The Murrumbidgee Northern Irrigation Scheme.* This scheme provides for the utilisation of a large proportion of the waters flowing from the Murrumbidgee catchment area in normal seasons. The works which are necessary to provide for the conservation of these waters consist in the first place of a large storage reservoir in which the water is to be retained by a weir known as the "Burrinjuck Dam." This dam is being constructed across the channel of the Murrumbidgee River, about three miles below the confluence of the Goodradigbee River. The catchment area above this point is 5000 square miles.

The retaining wall will have a total height of 240 feet from its crest to the deepest foundation level; the total length will be 784 feet curved in plan to a radius of 1200 feet; the thickness at the crest will be 18 feet and at the base 170 feet. The maximum depth of the water stored will be 224 feet, the total volume being 33,630 million cubic feet. The wall itself will contain about 600,000 tons of material, and will require about 50,000 tons of cement for its construction. The work is now partially completed and it is estimated that it will be finished in 1913. The object of constructing this weir is to regulate the supply of water, so that the large volumes which are afforded by the winter rains and the melting snows of the spring may be retained and made available to supplement the natural flow of the river in the dry months of the summer, when irrigation water is most required. The volumes of water thus made available for irrigation requirements will be conveyed in the channel of the Murrumbidgee River for a distance of 200 miles from the storage to a point above the town of Narrandera at Berembé, where a reservoir known as the Berembé Weir is in course of construction with the object of diverting supplies by gravitation into the irrigation lands. A main canal, capable of carrying 1000 cubic feet per second, is being constructed from the Berembé weir for the purpose of conveying the waters to the irrigable lands situated along the base of the hills to the west of the town of Narrandera.

It is proposed that the State Government shall acquire and subdivide for the purposes of intense culture the whole of these irrigable areas, which consist of about 200,000 acres of first-class and 360,000 acres of second-class land. The main canal will be capable of carrying to these areas only about one half of the water which will be made available for irrigation by the construction of the Burrinjuck dam. No determination has yet been arrived at as to whether the additional available volumes will be utilised for irrigating further areas of these same lands on the northern side of the river, or whether a separate canal will be constructed for the purpose of carrying supplies to lands on the southern side.

It is stated that the conditions as regards water-supply, soil, and climate are such as to ensure the success of the scheme, and it is anticipated that when the whole of the lands are settled there will be an addition of at least 50,000 people to the population within the district. It is expected that, in addition to the horticultural crops which will be grown, the supplies of fodder which will be afforded by the irrigation settlement will be sufficient to obviate the evil effects of droughts in the surrounding pastoral districts and will thus largely increase their stock-carrying capacity and productiveness.

(iv). *Other Irrigation Schemes.* The following proposals are under investigation by the State Irrigation Department :—

- (a) *Lachlan River.* The construction of a storage reservoir on this river at a place known as Wyangala, below the confluence of the Abercrombie River, for the purpose of affording water in the river channel for pastoral purposes and for the irrigation of small areas along the river banks by pumping.
- (b) *Macquarie River.* The construction of a storage reservoir on this river at Burrendong below the confluence of the Cudgegong River, for the purpose of affording water by gravitation for the irrigation of certain lands to the west of Narromine.
- (c) *Murray River.* The construction of a storage reservoir across the Murray River at Camberoon, above Albury, in order to supply water by gravitation through a canal which will be taken off at Bungowannah, below Albury, for the irrigation of high-class lands lying between the Murray and the Billa-bong Creek near the town of Berrigan.
- (d) *Hunter River.* The construction of storage reservoirs on the Upper Hunter or Goulburn River with a view to supplying water by pumping from the Hunter River to the adjoining lands and supplementing the water supply of Newcastle. It is stated that the valley of this river is one of the most fertile districts in the State and that it is capable of carrying a dense population under the conditions of intense culture by irrigation.
- (e) *Darling River.* The conversion of Lake Menindie into a large permanent storage by means of a diversion weir across the Darling River and of a canal through Lake Pamamaroo, the water so stored to be utilised in the irrigation of the bed of Lake Cawndilla and of certain lands to the south-west.
- (f) *Warragamba River.* A scheme has been prepared for the construction of a large storage dam on the Warragamba River, so as to retain a depth of 225 feet and a volume of 103,000 million gallons of water. This would be available for the supply of 80 million gallons daily for the domestic services of Sydney, 30 million gallons daily for trade purposes, and 80 million gallons daily for irrigation purposes in the county of Cumberland.

It is proposed that the water for domestic purposes should be conveyed and delivered at Potts Hill through 48 miles of open concrete channel and pipes; that the supplies for trade purposes should be delivered in the vicinity of the Great Western Railway, between St. Mary's and Penrith; and that the lands situated along the banks of the Nepean River and in the valley of South Creek should be irrigated.

3. *Victoria.*—(i.) *Classification of Works.* The Water Conservation Works in Victoria naturally divide themselves into those providing mainly a domestic supply, such as the Yan Yean works, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Broken River, Kerang Lakes, and Mallee Supply Works, which, although now administered by the State Rivers and Water Supply Commission, are properly local

government works; other works for domestic supply controlled by Water Works Trusts or Municipal Corporations; and irrigation works proper. With the exception of the last-named class particulars as to these works will be found in the section on "Local Government" of this book.

(ii.) *Works Controlled by the Commission.* With the exception of the First Mildura Irrigation and Water Supply Trust, all of the irrigation schemes and the more important domestic and stock water-supply works in rural districts are vested in and controlled by the State Rivers and Water Supply Commission, which was created by the Water Act 1905, in force since 1st May, 1906. The works under the control of this body, which is composed of three members, may be classified as follows:—(a) Irrigation schemes; and (b) Domestic and stock schemes included in which are a number for providing town supplies, the principal being the Coliban system. The following statement shews the capital cost of each class of works under the control of the commission:—

**VICTORIA.—COST OF WORKS VESTED IN, AND UNDER CONTROL OF, STATE  
RIVERS AND WATER SUPPLY COMMISSION, 1911.**

Particulars.		Irrigation Schemes.	Domestic and Stock Schemes including Town Supplies.	Miscellaneous.	Total.
Capital cost	£	2,889,479	1,989,525	66,547	4,945,551

(a) *Irrigation Schemes.* This division comprises the schemes constructed and under construction for the supply of water to between twenty to thirty irrigation districts. Up to 1906 these schemes were controlled by local Trusts which had obtained the moneys for the construction on loans from the State. By the Water Act 1905 all local control was abolished and the districts were transferred to the State Rivers and Water Supply Commission. Since this date the Government has adopted a vigorous irrigation policy and the expenditure on construction during the past four years amounts to £1,250,000. The irrigation works draw their supplies mainly from headworks constructed on the Murray, Goulburn, and Loddon rivers. The cost of these works, which now stands at £1,087,000, is not debited to the districts benefited, but is borne entirely by the State. Within the last two years the State has adopted the policy of purchasing large areas of land commanded by these schemes and subdividing them for intensive culture. The settlement of the areas on these lines will mean a large increase in the population of the State.

(b) *Domestic and Stock Schemes.* The second division takes into account the schemes constructed and under construction for the supply of water for domestic and stock purposes to very large tracts of country. The principal works of this division are situated in the Wimmera and Mallee districts, and cover an area of about 6000 square miles. The loan expenditure for 1901-11 within this area amounted to between £50,000 and £55,000, while for 1911-12 it is estimated that the expenditure will amount to over £60,000. In addition to the Commission's districts some large areas are still administered by local authorities.

It should be mentioned that in 1899 the State deemed it advisable to write off the sum of £1,073,000 from capital accounts of the local bodies then controlling the works in each of the above divisions.

(iii.) *Mildura.* The first settlement of Mildura dates from 1884. After being managed until 1887 by Chaffey Bros., and then until 1895 by Chaffey Bros. Company Limited, it was in that year taken over by the First Mildura Irrigation Trust and has since then made great progress. Its population, at the Census of 1911, was 6145. For

the year ending 30th June, 1910, the receipts of this Trust aggregated £21,329, and its expenditure £16,466. For the same period the area of land under cultivation and the record of water acres were 12,189 and 35,475 acres respectively.

No precise figures are available as to the capital cost of the works at Mildura; probably the sum was not less than £180,000. The amount due to Government is £72,430, exclusive of £15,434 for accumulations of interest.

(iv.) *Lands supplied with water within the State.*—The area of country lands within the State artificially supplied with water for domestic and ordinary use and for watering stock is approximately 17,000 square miles, equal to 10,880,000 acres. The extent of land under irrigated culture, for all kinds of crop, is 142,857 acres, an increase of 13,086 acres over the area irrigated in the previous year. About 11,000 acres have been watered under yearly permits granting authority to divert water from streams throughout the State. Further progress has been made during the year in bringing all such diversions under the control of the Commission, 469 permits authorizing diversions for irrigation, domestic and stock, and power purposes being now in force.

4. *Queensland.*—The main irrigation works in Queensland are as follow:—(a) those at Ayr, which utilise the waters of the Burdekin River, and shallow wells on its banks; (b) those at Bingera, near Bundaberg, which utilise water pumped from the Burnett River just above the point of meeting of the salt and fresh waters, and (c) those at Fairymead, which utilise water pumped from a number of shallow spear wells sunk on the alluvial flats on the north side of the Burnett River and about six miles from Bundaberg. Apart from the persons benefiting from the two schemes mentioned, there were said to be not more than 363 irrigators in 1909, chiefly farmers and graziers, in the State.

5. *South Australia.*—(i.) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established on similar lines to Mildura, but on a considerably smaller scale. At present the extent of the land assessed for the purpose of the trust is approximately 5200 acres, and maintains a population of about 2000. The value of Renmark products averages about £100,000 per annum. It is claimed that without irrigation the land would barely feed 500 sheep.

(ii.) *Other Waterworks.* The Bundaleer reservoir consists of a large earth and clay embankment which impounds water in a natural basin away from the main water-courses. Its capacity is stated at 1,319,000 gallons.

The Barossa waterworks have a reservoir wall of concrete seventy-five feet in height. The reservoir has a holding capacity of 993,340,000 gallons.

A reservoir, the first in the northern part of the State, was completed at the end of 1909 on Pekina Creek, above Orroroo.

The largest of the South Australian undertakings is the Beetaloo waterworks, which supply the towns of Port Pirie, Moonta, Wallaroo, Kadina, and fifteen others, besides one million acres of country lands. The cast-iron reticulation pipes in connection with Beetaloo are 637 miles in length, and the capital cost of the works was £989,950.

None of the South Australian works, Renmark excepted, are, however, irrigation works properly so called, although they are to some extent used for irrigation purposes,

(iii.) *Area under Irrigation.* The area under irrigation in South Australia, including reclaimed lands along the Murray, amounted to only 20,000 acres at the beginning of 1911. The Government, however, proposes to push on with the irrigation schemes along the Murray as fast as possible. The Cobdogla station, held under grazing permits, will be the next area taken in hand, and notice for the resumption of 118 square miles has been given to the present occupiers. The area comprises practically the whole of the original Lake Bonney irrigation scheme, and is contiguous to the Berri irrigation area, which contains a further 19,000 acres of the Cobdogla run. It is proposed to start

the reticulation with channels for an area of 5000 acres, between the Cobdogla homestead and Lake Barmera (formerly Lake Bonney), which lends itself to economical irrigation. A large central pumping station will be erected at the south end of the lake, and will command the whole of the irrigation area, including the 5000 acres, the maximum lift being about 90 feet.

**6. Conflicting Interests.**—The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River are undetermined. Territorially the south bank of the Murray was the boundary between the two former States, *i.e.*, the region of the river itself, up to the point where it enters South Australia, was wholly within New South Wales.

At the Federal conventions which preceded the establishment of the Commonwealth the South Australian representatives expressed their fear lest too much irrigation on the Murray and Darling might impair the navigability of the latter river, and the result was the insertion of a provision in the Commonwealth Constitution which reads as follows:—

*“Section 100.*—The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or the residents therein to the reasonable use of the waters of rivers for conservation and irrigation.”

Under this section negotiations have for several years been in progress between the three interested States. In January, 1911, a conference took place in Melbourne between the Premiers of New South Wales, Victoria, and South Australia on the Murray Waters question. One of the primary objects of this conference was to discuss the provision in the Murray Works Act, passed by the South Australian Government in 1910, authorising the carrying out of certain works at Lake Victoria in New South Wales subject to an agreement being made for the acquisition by South Australia of the lake together with the two watercourses, known as Rufus River and Frenchman's Creek, connecting the River Murray with the lake. The Premier of South Australia claimed the right to have enough water sent down the river to maintain navigation, and also asserted a right to the waters flowing down the Goulburn in Victoria, and the Murrumbidgee in New South Wales, into the Murray, as well as to the waters of the Murray itself, not only for navigation, but also for the irrigation purposes contemplated by the Government of South Australia. In support of the navigation proposal it was stated that South Australia had in view a scheme for cutting a canal from the Murray to Victoria Harbour, with harbour improvements, etc., which altogether would cost a million sterling. Briefly stated, the results of the conference were that South Australia was to be allowed to carry out storage works at Lake Victoria, New South Wales, and lock her own portion of the Murray at her own expense, but New South Wales and Victoria would not recognise the claims of navigation in any way, and would not bind themselves to deliver any quantity of water at the point of intake into South Australia. No rights to navigation were conceded by New South Wales and Victoria, and the upper portions of the river were left free for irrigation. The storage works which the South Australian Government proposes to construct at Lake Victoria will cost about £162,000, and the total scheme, which will include the construction of at least five locks, will cost between £600,000 and £700,000. It is estimated that as the result of the storage works 22,000,000,000 cubic feet of water can be impounded in Lake Victoria. It is stated that there will be no difficulty in filling the lake in the winter months.



## SECTION XV.

## COMMERCE.

## § 1. Introductory.

1. **General.**—The development of the commerce of Australia might be considered from several standpoints—for example, the historical, the legal, or the purely financial—all of which are important.

The importance of the subject demands a reference to the constitutional power of the Commonwealth in respect to commerce and to the various Acts which have been passed in the exercise of that power, since these profoundly affect its trade and commerce.

In setting out the statistics of commerce regard will be had to the significant features of its development, both from the historical and financial point of view.

2. **Constitutional Powers of Commonwealth in regard to Commerce.**—Under the provisions of the Commonwealth Constitution Act power to make laws with respect to “trade and commerce with other countries and among the States” is vested in the Commonwealth Parliament. [Chap. I., Part V., sec. 51 (i.) *vide* p. 22 of this volume.]

The Constitution Act further provides in relation to trade that:—

“On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.” [Section 86.]

“Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.” [Section 88.]

“On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

“On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.” [Section 90.]

“Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.” [Section 91.]

"On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free." [Section 92, 1st paragraph].

"The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State." [Section 98.]

"The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof." [Section 99.]

"The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation." [Section 100.]

"There shall be an Interstate Commission, with such powers of adjudication and administration as the Parliament deems necessary, for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder." [Section 101.]

"The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable or unjust to any State; due regard being had to the financial responsibilities incurred by any State in connection with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Interstate Commission." [Section 102.]

"The members of the Interstate Commission—

- (i.) Shall be appointed by the Governor-General in Council;
- (ii.) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of the Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity;
- (iii.) Shall receive such remuneration as the Parliament may fix; but such remuneration shall not be diminished during their continuance in office." [Section 103.]

"Nothing in this Constitution shall render unlawful any rate for the carriage of goods upon a railway, the property of a State, if such rate is deemed by the Interstate Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States." [Section 104.]

Provisions of a temporary nature and which have now ceased to operate were also made as follows:—

"But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation." [Section 92.]

"Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth; and such duties shall be collected by the Commonwealth.

"But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

"If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth." [Section 95.]

## § 2. Commonwealth Commercial Legislation.

1. **Customs Act 1901 (No. 6 of 1901).**—"An Act relating to the Customs," assented to on the 3rd October, 1901, came into operation by proclamation on the 4th October, 1901. This provided for the establishment of the necessary administrative machinery for all matters pertaining to the customs, and prescribed, *inter alia*, the manner in which customs duties shall be computed and paid. It does not, however, determine the rates thereof.

During the interval between the inception of the Commonwealth, viz., on 1st January, 1901, and the coming into operation of the Customs Act 1901, the Customs Acts of the several States were administered by the Executive Government of the Commonwealth, under section 86 of the Constitution.

2. **Customs Tariff Act 1902 (No. 14 of 1902).**—The first Commonwealth Customs Tariff imposing uniform rates of customs duty in all the States was introduced in the House of Representatives on the 8th October, 1901. "An Act relating to Duties of Customs," assented to on the 16th September, 1902, made provision that uniform duties of customs specified in the tariff schedule should be imposed from the 8th October, 1901, at four o'clock in the afternoon, reckoned according to the standard time in force in the State of Victoria. From this time onwards trade between the States became free, with, however, the exception, under section 95 of the Constitution Act, of the right of Western Australia to levy duty on the goods from other States. [Repealed by the Customs Tariff Act 1908 (No. 7 of 1908).]

3. **Sea Carriage of Goods Act (No. 14 of 1904).**—"An Act relating to the Sea Carriage of Goods," assented to on the 15th December, 1904, to commence on the 1st January, 1905, provides that—"Where any bill of lading or document contains any clause, covenant or agreement whereby (a) the owner, charterer, master, or agent of any ship or the ship itself, is relieved from the liability for loss or damage to goods arising from the harmful or improper condition of the ship's hold, or any other part of the ship in which goods are carried, or arising from negligence, fault, or failure in the proper loading, stowage, custody, care, or delivery of goods received by them or any of them to be carried in or by the ship; or (b) any obligations of the owner or charterer of any ship to exercise

due diligence and to properly man, equip, and supply the ship, to make and keep the ship seaworthy, and to make and keep the ship's hold, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage and preservation, are in any wise lessened, weakened, or avoided; or (c) the obligations of the master, officers, agents, or servants of any ship to carefully handle and stow goods, and to care for, preserve, and properly deliver them, are in any wise lessened, weakened, or avoided; that clause, covenant, or agreement shall be illegal, null and void, and of no effect.

"In every bill of lading with respect to goods a warranty shall be implied that the ship shall be, at the beginning of the voyage, seaworthy in all respects and properly manned, equipped, and supplied.

"In every bill of lading with respect to goods, unless the contrary intention appears, a clause shall be implied whereby, if the ship is at the beginning of the voyage seaworthy in all respects and properly manned, equipped, and supplied, neither the ship nor her owner, master, agent, or charterer shall be responsible for damage to or loss of the goods resulting from (a) faults or errors in navigation; or (b) perils of the sea or navigable waters; or (c) acts of God or the King's enemies; or (d) the inherent defect, quality, or vice of the goods; or (e) the insufficiency of package of the goods; or (f) the seizure of the goods under legal process; or (g) any act of omission of the shipper or owner of the goods, his agent, or representative; or (h) saving or attempting to save life or property at sea; or (i) any deviation in saving or attempting to save life or property at sea."

**4. Secret Commission Act 1905 (No. 10 of 1905).**—"An Act relating to Secret Commissions, Rebates, and Profits," assented to on the 16th November, 1905, provides that—"Any person who, without the full knowledge and consent of the principals directly or indirectly, (a) being an agent of the principal, accepts or obtains, or agrees or offers to accept or obtain, for any person, for himself, or for any person other than the principal; or (b) gives or agrees to give or offers to the agent of a principal, or to any person at the request of an agent of the principal, any gift or consideration as an inducement or reward for any act done or to be done, or any forbearance observed or to be observed, or any favour or disfavour shewn or to be shewn in relation to the principal's affairs or business or on the principal's behalf, or for obtaining or having obtained, or aiding or having aided to obtain for any person an agency or contract for or with the principal, shall be guilty of an indictable offence.

"Any person who (a) gives to an agent; or (b) being an agent receives or uses, with intent to deceive the principal, any receipt, account, or document in respect of which the principal is interested or in relation to a dealing, transaction, or matter in which the principal is interested, the receipt, account, or document being false, erroneous, or defective in any material particular, or likely in any way to mislead the principal, shall be guilty of an indictable offence.

"Any agent who, without the full knowledge and consent of the principal, buys from or sells to himself, or any firm of which he is a partner, or any company of which he is a director, manager, officer, or employee, or in which he or any person for him or on his behalf is a shareholder, any goods for or on behalf of his principal, shall be guilty of an indictable offence.

"Whoever aids, abets, counsels, or procures, or is in any way directly or indirectly knowingly concerned in or privy to (a) the commission of any offence against this Act; or (b) the commission outside Australia of any act, in relation to the affairs or business or on behalf of a principal residing in Australia, which, if committed in Australia, would be an offence against this Act, shall be deemed to have committed the offence and be punishable accordingly.

"This Act applies to trade and commerce with other countries and among the States, and to agencies of and contracts with the Commonwealth or any department or officer thereof.

**5. Commerce (Trade Descriptions) Act 1905 (No. 16 of 1905).**—"An Act relating to Commerce with other Countries," assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906, gives power to compel the placing of a proper description on certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth. In this Act, unless the contrary intention appears, "trade description" in relation to any goods, means any description, statement, indication, or suggestion, direct or indirect, "(a) as to the nature, number, quantity, quality, purity, class, grade, measure, gauge, size, or weight of the goods; or (b) as to the country or place in or at which the goods were made or produced; or (c) as to the manufacturer or producer of the goods or the person by whom they were selected, packed, or in any way prepared for the market; or (d) as to the mode of manufacturing, producing, selecting, packing, or otherwise preparing the goods; or (e) as to the material or ingredients of which the goods are composed, or from what they are derived; or (f) as to the goods being the subject of an existing patent privilege, or copyright, and includes a customs entry relating to goods; and any mark which, according to the custom of the trade or common repute, is commonly taken to be an indication of any of above matters, shall be deemed to be a trade description within the meaning of this Act.

"'False trade description' means a trade description which, by reason of anything contained therein or omitted therefrom, is false or likely to mislead in a material respect as regards the goods to which it is applied, and includes every alteration of a trade description, whether by way of addition, effacement, or otherwise, which makes the description false or likely to mislead in a material respect."

The operation of the Act is restricted to the following classes of goods:—(a) Articles used for food or drink by man, or used in the manufacture or preparation of articles used for food or drink by man; or (b) medicines or medicinal preparations for internal or external use; or (c) manures; or (d) apparel (including boots and shoes), and the materials from which such apparel is manufactured; or (e) jewellery; or (f) seeds and plants.

**6. Australian Industries Preservation Act 1906 (No. 9 of 1906).**—"An Act for the Preservation of Australian Industries and for the Repression of Destructive Monopolies," assented to 24th September, 1906, provides that any person or any corporation making or engaging or continuing in any combination "with intent to restrain trade or commerce to the detriment of the public or with intent to destroy or injure by means of unfair competition any Australian industry the preservation of which is advantageous to the Commonwealth, having due regard to the interests of the producers, workers, or consumers," or any person or corporation monopolising or attempting or conspiring to monopolise any part of the trade of the Commonwealth with intent to control, to the detriment of the public, the supply or price of any service, merchandise, or commodity, is guilty of an offence. Amended, see Acts No. 5 of 1908 and No. 26 of 1909-1910.)

**7. Customs Tariff 1906 (No. 14 of 1906).**—"An Act relating to Duties of Customs" amends the Customs Tariff of 1902 in relation to the duties on harvesters and agricultural implements and machinery and prescribes the prices to be the maximum prices of Australian harvesters and drills delivered to the purchaser at the railway station or port nearest to the factory where they are made. [Repealed by Customs Tariff Act 1908 (No. 7 of 1908.)]

**8. Customs Tariff (South African Preference) 1903 (No. 17 of 1906).**—"An Act relating to Preferential Duties of Customs on certain goods the produce or manufacture of the British Colonies or Protectorates in South Africa which are included within the South African Customs Union," assented to 12th October, 1906, to operate from 1st October, 1906, provides for special preferential rates of duty on certain goods imported from and being the produce of any of the Colonies or Protectorates included within the South African Customs Union.

**9. Australian Industries Preservation Act 1907 (No. 5 of 1908).**—"An Act to amend the Australian Industries Preservation Act 1907," assented to 14th April, 1908, provides additional machinery for procuring evidence of offences against the principal Act.

**10. Customs Tariff 1908 (No. 7 of 1908).**—"An Act relating to Duties of Customs," assented to 3rd June, 1908, repeals Section 5 of the Customs Tariff 1902 (No. 14 of 1902) and the schedule of that Act and the whole of the Customs Tariff 1906 (No. 14 of 1906) as from 8th August, 1907, at 4 o'clock in the afternoon, reckoned according to the standard time in the State of Victoria,<sup>1</sup> and imposes new rates of Customs Duties from that time. This Act provides preference rates of customs duties on certain "goods the produce or manufacture of the United Kingdom which are shipped in the United Kingdom to Australia and not transhipped, or if transhipped then only if it is proved to the satisfaction of the Collector (of Customs) that the goods have not, since they were shipped in the United Kingdom, been subjected to any process of manufacture."

**11. Customs Tariff Amendment Act 1908 (No. 13 of 1908).**—"An Act to amend the Tariff Act of 1908," assented to 10th June, 1908, provides that where the rate of duty to be paid on goods the produce or manufacture of the United Kingdom is not set out in the Customs Tariff 1908, and where such goods are not expressly declared to be free, the "General Tariff" rates shall apply. This Act also provides that no higher duty shall be payable under the South African Preference Act 1906, than the duty under the General Tariff of the Customs Tariff 1908, and that no duty shall be payable under that Act on any goods which are free of or exempt from duty under the General Tariff of the Customs Tariff 1908. The purpose of this Act is merely to remove possible doubt as to the intention of the original Acts.

**12. Australian Industries Preservation Act 1909 (No. 26 of 1909).**—"An Act to amend the Australian Industries Preservation Acts 1906-1907" formally repeals Sections 5 and 8 of the parent Act, which were declared by the High Court to be *ultra vires*; also provides that, in relation to trade and commerce with other countries or among the States, the payment of rebates, or the refusal to sell, "either absolutely or except upon disadvantageous conditions," with the purpose of promoting exclusive dealing, shall be an offence.

**13. Customs (Interstate Accounts) Act 1910 (No. 9 of 1910).**—Repeals Sections 272 and 273 of the Customs Act 1901. These sections relate to the passing of dutiable goods from one State to another State of the Commonwealth and their repeal was consequent on the termination of the book-keeping system of accounts, between the Commonwealth Government and the Governments of the States, in favour of a system of payments based on population.

**14. Australian Industries Preservation Act 1910 (No. 29 of 1910).**—An Act to amend the Australian Industries Preservation Act 1906-1909. This Act removes from the principal Act the obligation to prove *intent* to restrain trade and detriment to the public.

**15. Customs Act 1910 (No. 36 of 1910).**—An Act to amend the Customs Act 1901 gives the Customs control of all goods for export, the exportation of which is subject to compliance with any condition or restriction under any Act or regulation, extends the machinery provisions for the prevention of the importation or exportation of goods which are prohibited imports or exports respectively, amends the provisions for the payment of duty under protest, gives the Governor-General power to prescribe the nature, size, and material of the coverings for packages, and the maximum or minimum weight or quantity to be contained in any one package of goods imported or exported, or transported coastwise from one State to another; the condition of preparation or manufacture for export of any articles used for, or in the manufacture of, food or drink by man; the conditions as to purity, soundness, and freedom from disease to be conformed to by the goods for export.

1. "Standard time" is identical in the States of New South Wales, Victoria, Queensland, and Tasmania.

16. **Customs Tariff 1910 (No. 39 of 1910).**—An act relating to duties of Customs, amends the Customs Tariff of 1908 by more explicit definition of certain tariff items, and by alteration of some rates of duty.

17. **Customs Tariff 1911 (No. 19 of 1911).**—An Act relating to duties of Customs amends the Customs Tariff of 1908-10 by alteration of some rates of duty.

### § 3. Method of Recording Imports and Exports.

1. **Value of Imports.**—The recorded value of goods imported from countries beyond the Commonwealth represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods is taken to be 10 per cent. in advance of the fair market value in the principal markets of the country whence the goods were exported, the increase being intended to represent roughly the cost plus insurance, freight, and other charges to the place of landing.

2. **Value of Exports.**—The recorded value of goods exported is taken to represent the value in the principal markets of the Commonwealth in the ordinary commercial acceptance of the term.

3. **Records of Past Years.**—In the years preceding federation each State independently recorded its trade, and in so doing did not distinguish other Australian States from foreign countries. As the aggregation of the records of the several States is, necessarily, the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports were not on uniform lines admitting of the preparation of a record for Australia as a whole. On the introduction of the Customs Act 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Up to this date goods arriving in any Australian port for transshipment to a port in another Australian State were recorded at the latter port only, where they were ordinarily recorded as from the transshipping State, and not as an import from the overseas country.

In recording exports an analogous defect also existed in most of the States, since goods despatched from one Australian State for transshipment in another State to an overseas country were simply recorded in the former as an export to the transshipping State; thus no proper record of the export overseas was made. Owing to this defect the overseas trade prior to September, 1903, is understated by an amount which it is impossible to accurately estimate, since it varies with the development of the shipping facilities of the States concerned. To discover the direction of the transshipping trade is not possible. The figures presented in the tables hereinafter are therefore the values as recorded, and must be taken as subject to the defects explained.

4. **Vessels (Ships) Imported and Exported.**—The imports or exports of vessels were not recorded prior to the year 1905. The value of vessels imported during the years 1905, 1906, 1907, 1908, 1909, and 1910 was, respectively, £265,957, £366,300, £680,700, £700,050, £757,100 and £711,850, while the exports for the same years were respectively £79,975, £51,365, £90,201, £82,355, £38,600, and £72,000.

5. **Ships' Stores.**—Prior to 1906 goods shipped in Australian ports on board overseas ships as ships' stores were included in the general exports. From 1906 ships' stores have been specially recorded as such, and omitted from the return of exports. The value of ships' stores during 1906 amounted to £875,966 (of which bunker coal represented £575,471, or 65.7 per cent.), during 1907 to £998,897 (bunker coal representing £663,724, or 66.45 per cent.), during 1908 to £1,196,106 (bunker coal £867,707, or 72.55 per cent.), during 1909 to £1,071,677 (bunker coal £781,113, or 72.90 per cent.), and during 1910 to £1,080,133 (bunker coal £740,567, or 68.57 per cent.).

### § 4. Oversea Trade.

1. **Total Oversea Trade.**—The following table shews the total trade of the Commonwealth with oversea countries from the earliest date for which records are available. In consequence of the defects of record, referred to in the preceding section, the results can be only approximate to the actual figures. The very marked rise and sudden fall in the value of imports during the period 1837 to 1842 were contemporaneous with heavy land speculation and a subsequent severe financial crisis. The great increase of trade in the early fifties is due to the discovery of gold. In the State of Victoria the value of imports from oversea countries increased from £500,000 in 1851 to nearly £11,000,000 in 1853, and to £13,000,000 in 1854; while in New South Wales similar imports rose from £1,390,000 in 1851 to £5,500,000 in 1854, when the total imports into the Commonwealth reached the sum of £34 13s. 10d. per head, and the total trade £56 3s. 10d. per head of the population. The rapid influx of persons anxious to share the good fortunes of these times, however, soon reduced the value of the trade per head, till, in 1858, it had declined to £31 19s. 6d. per head. The period 1867-1872 shews a marked reduction in the value of trade per head. For some years prior to this period New South Wales had experienced a succession of indifferent seasons, and Victoria was suffering from a congested labour market consequent on the decline of alluvial gold-mining in that State. This congestion of the labour market during the years 1862 to 1866 gave rise to the agitation for a protective tariff to provide employment in manufactures, and in April, 1866, the Tariff Act, which expressed the protective policy since adhered to in Victoria, was assented to.

#### OVERSEA TRADE OF COMMONWEALTH, 1826 to 1911.

Year.	Recorded Value.			Value per Inhabitant. <sup>1</sup>			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1826	435	131	566	8 3 10	2 9 4	10 13 2	30.1
1827	478	98	576	8 13 10	1 15 8	10 9 6	20.5
1828	735	122	857	12 17 0	2 2 8	14 19 8	16.6
1829	846	218	1,064	14 2 0	3 12 8	17 14 8	25.8
1830	697	194	891	10 11 6	2 18 11	13 10 5	27.8
1831	753	412	1,165	10 6 8	5 13 0	15 19 8	54.7
1832	956	495	1,451	11 19 4	6 3 11	18 3 3	51.8
1833	1,036	500	1,536	11 7 8	5 9 11	16 17 7	48.3
1834	1,373	756	2,129	13 9 10	7 8 6	20 18 4	55.1
1835	1,600	903	2,503	14 12 6	8 5 1	22 17 7	56.4
1836	1,659	985	2,644	13 18 4	8 5 3	22 3 7	59.4
1837	1,510	967	2,477	11 12 10	7 9 1	19 1 11	64.0
1838	2,055	1,054	3,109	14 7 3	7 7 4	21 14 7	51.3
1839	2,578	1,044	3,622	16 0 8	6 9 11	22 10 7	40.5
1840	3,615	1,513	5,128	20 1 6	8 8 1	28 9 7	41.9
1841	3,145	1,335	4,480	15 6 0	6 10 0	21 16 0	42.4
1842	1,742	1,264	3,006	7 10 11	5 9 7	13 0 6	72.6
1843	1,926	1,281	3,207	7 16 7	5 4 2	13 0 9	66.5
1844	1,201	1,291	2,492	4 13 4	5 0 4	9 13 8	107.5
1845	1,518	1,721	3,239	5 11 9	6 6 8	11 18 5	113.4
1846	1,995	1,794	3,789	6 19 5	6 5 5	13 4 10	89.9
1847	2,441	2,200	4,641	8 2 3	7 6 3	15 8 6	90.1
1848	2,000	2,278	4,278	6 4 10	7 2 2	13 7 0	113.9
1849	2,451	2,359	4,810	6 18 11	6 13 9	13 12 8	96.2
1850	3,009	2,688	5,697	7 14 8	6 18 1	14 12 9	89.3
1851	2,962	2,708	5,670	7 0 7	6 8 7	13 9 2	91.4

1. Reckoned on mean population of the year.



## OVERSEA TRADE OF COMMONWEALTH, 1826 TO 1911.—Continued.

Year.	Recorded Value.			Value per Inhabitant. <sup>1</sup>			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1852	4,798	10,896	15,694	10 1 9	22 18 3	33 0 0	227.0
1853	14,990	14,403	29,393	26 17 11	25 16 10	52 14 9	96.1
1854	22,478	13,928	36,406	34 13 10	21 10 0	56 3 10	62.0
1855	14,428	15,194	29,562	19 7 11	20 6 11	39 14 10	105.0
1856	16,631	16,234	32,865	19 18 4	19 8 9	39 7 1	97.6
1857	18,872	16,127	34,999	20 9 0	17 9 5	37 18 5	85.5
1858	17,668	14,625	32,293	17 9 11	14 9 7	31 19 6	82.8
1859	20,376	17,027	37,403	18 19 6	15 17 1	34 16 7	83.6
1860	20,536	16,081	36,617	18 6 5	14 6 11	32 13 4	78.3
1861	17,651	17,413	35,064	15 5 2	15 1 1	30 6 3	98.7
1862	20,599	18,065	38,664	17 7 1	15 4 5	32 11 6	87.7
1863	21,248	19,336	40,584	17 4 7	15 13 7	32 18 2	91.0
1864	20,503	18,977	39,480	15 17 4	14 13 6	30 10 10	92.6
1865	20,660	19,706	40,366	15 4 4	14 10 4	29 14 8	95.4
1866	21,311	18,972	40,283	15 0 10	13 7 10	28 8 8	89.0
1867	15,964	18,384	34,348	10 18 1	12 11 2	23 9 3	115.2
1868	18,436	21,650	40,086	12 3 11	14 6 6	26 10 5	117.4
1869	19,910	20,066	39,976	12 14 4	12 16 4	25 10 8	103.8
1870	17,893	18,012	35,845	11 0 2	11 2 5	22 2 7	101.0
1871	17,017	21,725	38,742	10 3 3	12 19 6	23 2 9	127.7
1872	18,833	22,518	41,351	10 18 9	13 1 7	24 0 4	119.6
1873	24,567	26,370	50,937	13 17 10	14 18 2	28 16 0	107.4
1874	24,554	25,646	50,200	13 9 9	14 1 8	27 11 5	104.5
1875	24,939	24,978	49,917	13 6 2	13 6 7	26 12 9	100.1
1876	23,963	23,540	47,503	12 8 7	12 4 2	24 12 9	98.2
1877	25,797	23,107	48,904	12 18 8	11 11 8	24 10 4	89.6
1878	26,181	23,773	49,954	12 14 0	11 10 8	24 4 8	90.8
1879	24,233	21,184	45,417	11 7 10	9 19 2	21 7 0	87.4
1880	22,939	27,255	50,194	10 8 10	12 8 1	22 16 11	118.8
1881	29,067	27,528	56,595	12 16 2	12 2 8	24 18 10	94.7
1882	36,103	27,313	63,416	15 7 7	11 12 9	27 0 4	75.6
1883	35,454	30,058	65,512	14 9 9	12 5 8	26 15 5	84.8
1884	36,988	28,708	65,696	14 9 6	11 4 8	25 14 2	77.6
1885	36,862	26,667	63,529	13 18 2	10 1 3	23 19 5	72.3
1886	34,179	21,700	55,879	12 9 4	7 18 4	20 7 8	63.5
1887	29,572	23,421	52,993	10 8 8	8 5 3	18 13 11	79.2
1888	36,881	28,900	65,781	12 11 7	9 17 2	22 8 9	78.4
1889	37,577	29,553	67,130	12 8 8	9 15 7	22 4 3	78.6
1890	35,168	29,321	64,489	11 6 4	9 8 9	20 15 1	83.4
1891	37,711	36,043	73,754	11 16 0	11 5 6	23 1 6	95.6
1892	30,107	33,370	63,477	9 4 0	10 3 10	19 7 10	110.8
1893	23,765	33,225	56,990	7 2 7	9 19 4	17 1 11	139.8
1894	21,897	32,131	54,028	6 9 0	9 9 4	15 18 4	146.7
1895	23,195	33,644	56,839	6 14 1	9 14 6	16 8 7	145.0
1896	29,658	32,964	62,622	8 8 5	9 7 2	17 15 7	111.1
1897	31,958	37,783	69,741	8 18 3	10 10 9	19 9 0	118.2
1898	31,481	40,165	71,646	8 12 11	11 0 7	19 13 6	127.6
1899	34,330	48,599	82,929	9 6 0	13 3 5	22 9 5	141.6
1900	41,388	45,957	87,345	11 1 3	12 5 9	23 7 0	111.0
1901	42,434	49,696	92,130	11 3 11	13 2 2	24 6 1	117.1
1902	40,676	43,915	84,591	10 11 4	11 8 3	21 19 7	108.0
1903	37,811	48,250	86,061	9 14 3	12 7 10	22 2 1	127.6
1904	37,021	57,486	94,507	9 7 9	14 11 7	23 19 4	155.3
1905	38,347	56,841	95,188	9 11 9	14 4 1	23 15 10	148.2
1906	44,745	69,738	114,483	11 0 4	17 3 6	28 3 10	155.9
1907	51,809	72,824	124,633	12 11 3	17 13 2	30 4 5	140.6
1908	49,799	64,311	114,110	11 17 5	15 6 8	27 4 1	129.1
1909	51,172	65,319	116,491	11 19 5	15 5 7	27 5 0	127.6
1910	60,014	74,491	134,505	13 14 8	17 0 10	30 15 6	124.1
1911 <sup>2</sup>	66,973	79,483	146,456	14 18 4	17 14 1	32 12 5	118.7

1. Reckoned on mean population of the year. 2. Preliminary figures, subject to revision.

The graphs illustrating the movement of the oversea trade of Australia (see pages 643 and 644) shew that periods of depressed trade have been recurrent at more or less regular intervals of from seven to nine years, and measured by population, each succeeding depression since 1855 has carried the trade per head lower than the preceding one, until the lowest point was reached in 1894.

The year 1892 marked the beginning of a period of acute financial stress, culminating in the commercial crisis of 1893. The collapse of these years, by no means confined to Australia, but affecting in varying degree many countries, is plainly reflected in the records of the trade of that period, for the trade of 1894 had fallen to £54,028,227, a decline of no less than 26.75 per cent. in three years. In 1895 there was a slight recovery, and a continuous upward movement until 1901, when the trade reached £92,130,183, or £24 6s. 1d. per head. A decline, due to drought, in the exports of agricultural, pastoral, and dairy produce, reduced the trade of 1902 to £84,591,037, but although in the next year there was a further shrinkage in the exports of agricultural produce, the increase in the value of the exports of metals, specie, butter, and wool was so large as to effect an increase in the total trade. From 1902 the increase in the value of trade continued, till in 1907 it reached the amount of £124,633,280, equal to £30 4s. 5d. per inhabitant.

The imports during 1907 were, doubtless, to some extent inflated by the importation of goods in anticipation of the tariff revision of that year. The trade of 1908 shews a decline of £10,523,000 as compared with 1907, of which £8,513,000 was in the value of exports, notwithstanding an increase of £3,447,767 in the export of gold and specie. This decline in the value of exports was largely due to reduced prices ruling for wool and metals in consequence of the financial crisis in the United States during the previous year, and in lesser degree to the smaller exports of agricultural and pastoral produce, due to the unfavourable season experienced in some of the States.

The trade of 1909 per head of population was slightly more than in 1908, notwithstanding that the gold exports were less by £5,193,587. In 1910 the trade reached an absolute amount never before attained, while, measured by the population, the value of imports per head was higher than in any year since 1885, and the value of exports was—excepting the years 1906 and 1907—the highest since 1857. The high value of exports is particularly striking when considered in conjunction with the exceptionally small exports of gold. The exports of gold, already much reduced in 1909 as compared with 1908, were in 1910 still further reduced by £4,264,368 to £4,108,783, the smallest recorded since 1892. These relatively small exports of gold do not indicate the decline of the gold production, but are merely due to the fact that the recent prolific seasons and high prices made the exports of merchandise sufficient to meet all obligations abroad and so render the export of gold unnecessary. During 1911 the exports of gold again increased to twelve millions sterling. The particular classes of goods from which the increases in trade arise are shewn on pages 623 and 624.

**2. Ratio between Exports and Imports.**—The foregoing table shews the percentage of exports on imports for each year. From this it will be seen that, with few exceptions, due to temporary dislocations of trade, prior to 1892 the balance of trade has been on the side of imports, but from 1892 the reverse has been the case, the value of exports having increased by 123.22 per cent. and the imports by 99.34 per cent. The excess of imports in the earlier years represents the introduction of capital in the form of Government loans and for investment in private undertakings, and the excess of exports in the later years represents mainly the interest and profit on the earlier investments, repayment of loans to foreign bondholders, and also freight on trade which is carried mainly by ships of the United Kingdom and foreign countries.

## § 5. Direction of Trade.

**1. Country of Shipment and Country of Origin.**—From the 1st January, 1905, the Trade and Customs Department, in addition to the usual record of the countries whence goods directly arrived in Australia, has kept a record of the countries of their origin.

The following table shews, for the years 1906 and 1910, the value of imports recorded as direct from the principal countries, and also the disposition of the value of imports against the countries where they were produced or manufactured. A similar comparison for the years 1905, 1907, and 1908 will be found in previous issues of this work.

**COMMONWEALTH IMPORTS FROM COUNTRIES OF SHIPMENT AND COUNTRIES OF ORIGIN, 1906 and 1910.**

Country.	Imports according to—							
	Country of Shipment.				Country of Origin.			
	1906.		1910.		1906.		1910.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£		£		£		£	
United Kingdom ...	26,575,833	59.39	36,646,441	61.06	22,904,344	51.19	30,420,540	50.68
<b>BRITISH POSSESSIONS—</b>								
Canada ...	303,751	0.68	649,507	1.08	305,497	0.68	802,045	1.34
Ceylon ...	643,966	1.44	769,985	1.28	620,524	1.39	760,238	1.27
Hong Kong ...	230,311	0.52	244,724	0.41	6,299	0.01	3,152	...
India ...	1,761,035	3.94	2,668,862	4.45	1,828,017	4.09	2,786,479	4.55
New Zealand ...	3,156,469	7.05	2,203,806	3.67	2,988,776	6.68	2,102,149	3.50
Straits Settlements ...	269,013	0.60	588,177	0.98	136,849	0.31	164,792	0.27
Other British Possessions	386,765	0.86	740,588	1.24	583,537	1.30	951,635	1.59
<b>Total British Possessions</b> ...	<b>6,751,270</b>	<b>15.09</b>	<b>7,865,649</b>	<b>13.11</b>	<b>6,469,409</b>	<b>14.46</b>	<b>7,570,490</b>	<b>12.62</b>
<b>Total British Countries</b> ...	<b>33,327,103</b>	<b>74.48</b>	<b>44,512,090</b>	<b>74.17</b>	<b>29,373,753</b>	<b>65.65</b>	<b>37,991,030</b>	<b>63.30</b>
<b>FOREIGN COUNTRIES—</b>								
Austria-Hungary ...	8,828	0.02	10,189	0.02	109,014	0.24	311,361	0.52
Belgium ...	909,620	2.03	1,242,867	2.07	446,251	1.00	853,708	1.42
China ...	58,338	0.13	79,270	0.13	271,295	0.61	389,923	0.65
France ...	462,622	1.03	501,584	0.84	1,473,367	3.29	1,953,735	3.26
Germany ...	3,204,844	7.16	3,778,666	6.30	3,929,116	8.78	5,215,146	8.69
Japan ...	424,583	0.95	718,462	1.20	450,893	1.01	739,534	1.23
Netherlands ...	151,638	0.34	223,969	0.37	228,896	0.51	369,055	0.62
Norway ...	307,282	0.69	550,631	0.92	407,514	0.91	621,239	1.03
Spain ...	21,568	0.05	33,709	0.05	104,827	0.24	128,793	0.21
Sweden ...	52,306	0.12	360,633	0.60	212,229	0.47	520,121	0.87
Switzerland ...	27,085	0.06	31,765	0.05	474,804	1.06	1,023,723	1.71
United States ...	4,633,553	10.36	6,494,829	10.82	5,605,612	12.53	7,659,150	12.76
Other Foreign Countries	1,155,542	2.58	1,475,657	2.46	1,657,341	3.70	2,237,833	3.73
<b>Total Foreign Countries</b> ...	<b>11,417,809</b>	<b>25.52</b>	<b>15,502,261</b>	<b>25.83</b>	<b>15,371,159</b>	<b>34.35</b>	<b>22,023,321</b>	<b>36.70</b>
<b>Total Imports from all Countries</b> ...	<b>44,744,912</b>	<b>100</b>	<b>60,014,351</b>	<b>100</b>	<b>44,744,912</b>	<b>100</b>	<b>60,014,351</b>	<b>100</b>

The only country from which the value of direct imports exceeds by any large amount the value of the imports of goods which were manufactured or produced therein, that is to say, the only country which shews a balance of any magnitude as a distributor of the goods of other countries to Australia, is the United Kingdom. The records of our imports therefrom during the year 1910 shew that while the total direct imports from that country amounted to £36,646,441, the value of the manufactures or produce of the United Kingdom itself, imported from all countries whatsoever during the same year, was £30,420,540. From the foregoing figures it appears that goods to the value of at least £6,225,901 were received from other countries through the United Kingdom.

Other countries which shew balances as distributors to Australia, though absolutely of much less amount, are Belgium, Hong Kong, New Zealand, Straits Settlements, and Ceylon. The countries mentioned are, of course, not the only countries through which goods are indirectly imported into Australia, for the direct imports from other countries, notably France and Germany, include considerable values which are not of the produce of those countries. These values, however, are more than balanced by value of French and German goods received through the United Kingdom and other countries.

2. **Direct Imports according to Country of Shipment.**—The following table, shewing the average yearly value of imports from each of the principal countries during each succeeding quinquennial period from 1887 to 1906, and for the year 1910, shews considerable change in direction of imports during the past twenty years. The countries mentioned in this table are those where the goods were shipped or whence they were directly consigned to Australia.

**TRADE OF THE COMMONWEALTH WITH VARIOUS COUNTRIES, 1887 to 1910.**  
**IMPORTS (INCLUDING BULLION AND SPECIE.)**

Country.	Yearly Average of Quinquennial Periods.				Year 1910.
	1887-91.	1892-6.	1897-1901	1902-6.	
	£	£	£	£	£
United Kingdom ...	24,818,787	18,241,366	22,794,700	23,163,660	36,646,441
British Possessions—					
Canada ...	95,592	89,861	230,459	291,253	649,507
Ceylon ...	124,057	239,774	410,057	603,660	769,985
Fiji ...	170,100	92,125	104,459	79,820	172,985
Hong Kong ...	769,699	460,883	313,578	303,322	244,724
India ...	745,070	606,181	914,859	1,148,895	2,668,862
Mauritius ...	483,283	178,074	175,966	104,911	20,821
New Zealand ...	1,826,537	1,100,533	1,541,128	2,479,298	2,203,806
Papua ...	12,166	16,623	52,416	67,987	76,521
South African Union ...	13,983	16,019	3,972	9,528	69,472
Straits Settlements ...	126,691	138,055	281,022	178,658	588,177
Other British Possessions	22,605	15,718	34,247	136,449	400,789
Total British Possessions ...	4,389,783	2,953,846	4,062,163	5,403,781	7,865,649
Total British Countries ...	29,208,570	21,195,212	26,856,863	28,567,441	44,512,090
Foreign Countries—					
Argentine Republic ...	336	101	3,264	229,872	13
Belgium ...	227,995	274,559	394,094	559,880	1,242,867
Chile and Peru ...	19,419	2,511	32,128	16,112	59,939
China ...	800,454	327,120	262,195	135,219	79,270
France ...	360,000	201,284	476,756	465,330	501,584
Germany ...	1,286,054	1,107,496	2,254,746	2,703,806	3,778,666
Hawaiian Islands, New Britain, New Caledonia, New Hebrides, and South Sea Islands ...	109,862	78,286	150,510	140,294	238,400
Italy ...	31,650	67,672	137,852	168,221	274,991
Japan ...	39,787	63,195	225,086	380,388	718,462
Java ...	424,173	464,351	461,748	510,689	539,407
Netherlands ...	19,940	12,125	36,919	101,531	223,999
Norway ...	354,924	154,277	284,024	303,446	550,631
Philippine Islands ...	13,350	15,869	69,385	70,669	106,277
Sweden ...	167,178	21,872	97,189	69,828	360,633
United States of America	2,268,620	1,682,092	4,355,724	5,014,408	6,494,829
Other Foreign Countries	49,669	56,545	219,717	282,847	332,293
Total Foreign Countries ...	6,173,411	4,529,355	9,461,337	11,152,540	15,502,261
Total ...	35,381,981	25,724,567	36,318,200	39,719,981	60,014,351

Expressing each item as percentage on the total of the imports, the following results are obtained :—

**COMMONWEALTH IMPORTS.—PERCENTAGES OF THE IMPORTS FROM EACH COUNTRY ON THE TOTAL IMPORTS, 1887 to 1910.**

Country.	1887-91.	1892-6.	1897-1901.	1902-6.	1910.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom . . . . .	70.14	70.92	62.77	58.30	61.06
<b>BRITISH POSSESSIONS—</b>					
Canada . . . . .	0.27	0.35	0.64	0.73	1.08
Ceylon . . . . .	0.35	0.93	1.13	1.52	1.28
Fiji . . . . .	0.48	0.36	0.29	0.20	0.29
Hong Kong . . . . .	2.18	1.79	0.86	0.76	0.41
India . . . . .	2.11	2.36	2.52	2.89	4.45
Mauritius . . . . .	1.37	0.69	0.49	0.27	0.03
New Zealand . . . . .	5.16	4.28	4.24	6.24	3.67
Papua . . . . .	0.03	0.06	0.14	0.17	0.13
South African Union . . . . .	0.04	0.06	0.01	0.03	0.12
Straits Settlements . . . . .	0.36	0.54	0.77	0.45	0.98
Other British Possessions . . . . .	0.06	0.06	0.09	0.34	0.67
<b>Total British Possessions</b> . . . . .	<b>12.41</b>	<b>11.48</b>	<b>11.18</b>	<b>13.60</b>	<b>13.11</b>
<b>Total British Countries</b> . . . . .	<b>82.55</b>	<b>82.40</b>	<b>73.95</b>	<b>71.90</b>	<b>74.17</b>
<b>FOREIGN COUNTRIES—</b>					
Argentine Republic . . . . .	0.00	0.00	0.01	0.58	0.00
Belgium . . . . .	0.64	1.07	1.09	1.41	2.07
Chile and Peru . . . . .	0.06	0.01	0.09	0.04	0.09
China . . . . .	2.26	1.27	0.72	0.34	0.13
France . . . . .	1.02	0.78	1.31	1.17	0.84
Germany . . . . .	3.63	4.31	6.21	6.81	6.30
Hawaiian Islands, New Britain, New Caledonia, New Hebrides and South Sea Islands . . . . .	0.31	0.30	0.41	0.36	0.40
Italy . . . . .	0.09	0.26	0.38	0.42	0.46
Japan . . . . .	0.11	0.25	0.62	0.96	1.20
Java . . . . .	1.20	1.80	1.27	1.29	0.90
Netherlands . . . . .	0.06	0.05	0.10	0.26	0.37
Norway . . . . .	1.01	0.60	0.78	0.76	0.92
Philippine Islands . . . . .	0.04	0.06	0.19	0.18	0.18
Sweden . . . . .	0.47	0.08	0.27	0.18	0.60
United States of America . . . . .	6.41	6.54	12.00	12.62	10.82
Other Foreign Countries . . . . .	0.14	0.22	0.60	0.72	0.55
<b>Total Foreign Countries</b> . . . . .	<b>17.45</b>	<b>17.60</b>	<b>26.05</b>	<b>28.10</b>	<b>25.83</b>
<b>Total</b> . . . . .	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

3. Imports from the United Kingdom.—The foregoing tables shew that while the value of direct imports from the United Kingdom during 1910 is above the yearly average of the period under review, the proportion to total imports has diminished, having fallen from 70.14 per cent. during the years 1887-91 to 61.06 per cent. in 1910.

It will be observed, however, that the percentage proportion for 1910 is an advance on that of the quinquennium 1902-6, and is also higher than in the year 1909, when the proportion was 60.92 per cent. The position of the United Kingdom as indicated by her percentage proportion of the total trade is largely affected by the imports of vegetable foodstuffs, a branch of trade in which the United Kingdom cannot participate. The apparent diversion of Australian trade from Great Britain is more fully dealt with hereinafter, viz., in sub-section 11 of this chapter. The values of the principal imports of United Kingdom origin during the year 1910 are as follows:—

Alc and beer, £364,324; apparel and textiles—apparel, £2,395,661, textiles, £8,268,112; arms, ammunition and explosives, £552,232; books and periodicals, £501,495; brushware, £73,194; earthenware, etc., £246,490; clocks and watches, £43,468; cocoa and chocolate, £180,343; confectionery, £149,339; cordage, metal, £96,291; cordage, other, £129,845; cutlery, £182,752; drugs and chemicals—alkalies (soda), £97,617, fertilisers, £124,468, medicines, £157,712, other drugs and chemicals, £559,552; electrical and gas appliances, £161,627; electrical materials, £277,105; fancy goods, £202,860; fish, fresh and preserved, £147,793; furniture, £65,043; glass and glassware, £134,445; indiarubber manufactures, £232,799; instruments, musical, £72,921; instruments, scientific, etc., £178,937; iron and steel—pig, £105,596, bar, hoop, ingot, etc., £590,302, scrap, £48,118, girders, beams, etc., £138,588, plate and sheet, galvanised and corrugated, £1,590,746, not galvanised or corrugated, £201,788, pipes and tubes, £452,666, rails, fishplates, etc., £399,547, tinned plates, plain, £355,395; wire, £232,147; wire netting, £159,291; jewellery and precious stones, £231,395; leather and leather manufactures, £257,855; machines and machinery, £1,638,880; metals, manufactures of, £1,479,369; milk, preserved, £124,116; oils (not essential), £245,729; paints and colours, £311,641; paper, £718,610; pickles, sauces, etc., £117,650; plated ware, £211,487; soap, £45,853; specie, £369,487; spirits, £686,938; stationery, £730,328; tobacco, £44,167; tools of trade, £287,341; varnishes, £81,357; vehicles—bicycles, etc., £158,368, motors, £448,415, other vehicles, £79,739; vessels (ships), £687,500; yarns, £158,518.

4. **Imports Shipped from British Possessions.**—The growth of the value of imports from other British possessions during the past twenty years has been such as to increase the proportion to total imports from 12.41 per cent. in the years 1887-91 to 13.11 per cent. in 1910, the actual values being respectively £4,389,783 and £7,865,649. Of the total imports from British possessions during 1910, 28.01 per cent., or 3.67 per cent. of all imports, was from New Zealand, 33.93 per cent., or 4.45 per cent. of all imports, from India, and 9.79 per cent., or 1.28 per cent. of all imports, from Ceylon.

5. **Principal Imports, the Produce of British Possessions, 1910.**—These are as follows:—

(i.) *Africa, South.* Bark, tanning, £5385; coal, £24,787; explosives, £19,565; maize, £12,147; precious stones, £115,253.

(ii.) *Canada.* Apparel and textiles, £18,100; boots and shoes, £9473; drugs and chemicals, £8333; fish, £98,146; furniture, £13,124; Indiarubber and manufactures of, £7074; agricultural implements and machinery, £258,046; other machines and machinery, £20,242; metal manufactures, £21,743; paper, £163,080; timber, £77,150; bicycles and other vehicles, £60,250.

(iii.) *Ceylon.* Coffee and chicory, £1392; leather, £6987, nuts, £21,058; tea, £712,260. The large increase in the imports from Ceylon—from £124,057 during the years 1887-91, to £760,238 in 1910—is due to the displacement of China teas in the Australian markets by those of India and Ceylon. Of the total imports of tea during the year 1910, 56.31 per cent. was the produce of Ceylon.

(iv.) *Fiji.* Bananas, £42,655; copra, £12,438; sugar and molasses, £84,047.

(v.) *India.* Bags and sacks, £1,596,282; hessians, £183,778; carpets, mats, etc., £12,247; coal, £149,262; coffee and chicory, £31,723; cotton, raw, £25,144;

other unmanufactured fibres, £8528; iron pig, £17,137; linseed £8467; rice, £145,629; shellac, £6622; manures, £2961; oils—castor, £51,581, linseed, £11,039; skins and hides, £71,032; spices, £13,615; tea, £329,134; timber, £13,638; wax, paraffin, £41,937; yarns, £9,322.

(vi.) *Mauritius*. Sugar, £19,533.

(vii.) *New Zealand*. Apparel and textiles, £8121; animals—horses, £255,213, sheep, £13,103; military stores, 19,391; coal, £5657; fibre, flax, and hemp, £108,486; fish, £28,117; gold, bullion and ore, £896,057; grain, barley, £8444; hops, £17,608; implements and machinery (agricultural), £6774; machines and machinery, £7391; meats, £20,785; seeds, £33,803; skins and hides, £161,463; timber, £421,862; wool, £5360.

(viii.) *Straits Settlements*. Rice, £776; spices, £32,850; sago and tapioca, £45,431; canes and rattans, etc., unmanufactured, £11,013; rubber, and rubber manufactures, £42,820.

6. **Imports Shipped from Foreign Countries.**—The imports direct from foreign countries during the year 1910 represented 25.83 per cent. of the total imports, as compared with 17.45 per cent. during the years 1887-91. Compared, however, with the average of the quinquennium 1902-6, the proportion during the year 1910 shews a decline mainly due to the smaller proportion of the import trade drawn from the United States of America. Of the total imports into Australia shipped from foreign countries 24.38 per cent.—6.30 per cent. of all imports—was from Germany, and 41.90 per cent.—10.82 per cent. of all imports—was from the United States.

7. **Principal Imports the Produce of Foreign Countries, 1910.** The details are as follows:—

(i.) *Austria-Hungary*. Apparel and textiles, £138,393; furniture, £28,211; china-ware, £12,657; glassware, £11,948; fancy goods, £19,703; jewellery and precious stones, £8151; paper and stationery, £19,514; pipes, smoking, etc., £9395.

(ii.) *Belgium*. Apparel, £69,525; textiles, £133,294; candles, £3212; drugs, chemicals, and fertilisers, £18,767; glass and glassware, £121,378; iron and steel—partly manufactured, £109,283, girders, beams, etc., £1601, plate and sheet, £33,236, railway iron, £14,806; wire, £15,783; jewellery, £49,392; machines and machinery, £12,607; matches and vestas, £28,186; metal manufactures, £67,897; motors and parts, £28,727; paper, £30,250, zinc manufactures, £13,165.

(iii.) *Chile*. Soda nitrate, £60,714.

(iv.) *China*. Apparel and textiles, £99,813; cotton, raw, £13,839; fish, £13,100; fruit, £13,409; ginger, £7381; rice, £55,102; nuts, £13,192; oils, £11,820; tea, £85,427.

The decline of the value of imports from China during the past twenty years is due to the loss of the tea trade, which now draws its supplies mainly from India and Ceylon.

(v.) *France*. Apparel and textiles, £864,694; cream of tartar, £124,977; other drugs and chemicals, £52,862, fruits, £7799; fancy goods, £56,033; jewellery, £7277; time-pieces, £8155; pipes, smoking, etc., £46,336; motor vehicles and parts, £152,137; rubber manufactures, £48,533; leather, £15,874; spirits, £182,575; tiles, £17,362; wine, £104,531; machinery and manufactures of metal, £48,528.

(vi.) *Germany*. Ale and beer, £68,356; apparel and textiles, £1,441,355; arms, ammunition and explosives, £113,731; brushware, £38,721; cement, £46,420; chinaware, etc., £58,630, earthenware, £22,325; drugs and chemicals—calcium carbide, £8010, fertilisers, £38,772, other drugs, etc., £139,012; fancy goods, £142,657; furniture, £8869; minor articles for furniture, £5492; glass and glassware, £89,665; hops, £14,619; indiarubber manufactures, £119,419; metals and manufactures of metals—iron and steel—

bar, hoop, ingot, etc., £153,609, plate and sheet, £68,100, pipes and tubes, £34,917, railway iron, £33,864, tools of trade, £27,864; wire, £422,746; wire netting, £127,807; machines and machinery, £210,393; lamps and lampware, £48,563; electrical and gas appliances, £51,861; other manufactures of metals, £385,711; jewellery, cameos, etc., £80,562; leather and leather manufactures (excluding boots and shoes), £70,241; musical instruments, £322,331; paper, £165,898; spirits, £24,335; stationery, £82,204; tobacco, £8910; paints and varnishes, £12,524.

(vii.) *Italy*. Apparel and textiles, £173,313; fruits, £21,111; matches and vestas, £13,373; marble and stone, £27,021; oils, £23,477; nuts, £17,382; sulphur, £34,672; motors and parts, £37,302.

(viii.) *Japan*. Apparel and textiles, £389,013; bags, baskets, etc., £20,068; china-ware and earthenware, £14,703; fancy goods, £11,014; fertilisers (superphosphates), £37,114; furniture, £9333; rice, £37,899; oils and waxes, £39,808; sulphur, £39,670; timber, etc., £42,026.

(ix.) *Java*. Cotton, raw, £916; hats and caps, £3157; rice, £565; kapok, £78,471; rubber, £33,396; sugar, £313,940; timber, £1244; tobacco, £2637; tea, £102,264.

(x.) *Netherlands*. Apparel and textiles, £60,342; cocoa and chocolate, £64,372; cameos and precious stones, £26,111; metal manufactures, £11,747; paper, £27,982; spirits, £115,767.

(xi.) *Norway*. Calcium carbide, £40,545; fish, £59,842; milk, preserved, £3382; paper, £90,417; timber, £385,389; vessels, £24,350.

(xii.) *Philippine Islands*. Flax and hemp, £65,838; cigars, £42,882.

(xiii.) *Russia*. Flax, £7424; oils, £16,172; timber, £89,475.

(xiv.) *Sweden*. Calcium carbide, £36,739; earthenware, glassware, etc., £7289; electrical machinery and fittings, £9374; cream separators, £75,486; matches and vestas, £41,106; paper, £111,237; telephones, £40,249; timber, £148,828.

(xv.) *Switzerland*. Apparel and textiles, £840,842; cigars, £11,824; cocoa and chocolate, manufactured, £30,283; confectionery, £14,187; milk, £5000; watches, £77,034.

(xvi.) *United States of America*. Apparel and textiles—Boots and shoes, £73,831; other apparel, £124,530; textiles, £203,127; ammunition and explosives, £55,950; cameras, magic lanterns, phonographs, etc., £110,396; clocks and watches, £68,169; fish, £165,603; furniture, £54,763; glass and glassware, £39,738; glucose, £33,048; indiarubber manufactures, £42,692; leather, £263,671; meats, £76,372; medicines, £78,717; metal manufactures—iron and steel: bars, ingots, hoops, etc., £43,488, girders, beams, etc., £16,774, pipes and tubes, £57,376, plate and sheet, £154,498, railway iron, £371,561, tools of trade, £215,275; wire, £212,473; machines and machinery, agricultural, £242,995; other machines and machinery, £832,694; other metal manufactures, £356,632; musical instruments, £43,724; oils, fats and waxes—kerosene, £578,104, lubricating oils and greases, £133,996, naphtha, £33,028, paraffin wax, £37,171, turpentine, £57,831; paper, £189,038; resin, £35,688; soap, £49,520; stationery, £86,143; timber, £928,622; tobacco, cigars, etc., £579,450; wood manufactures, £99,797; vehicles, bicycles and motors, and parts, £115,371; other vehicles and parts, £71,412.

8. *Direction of Exports*.—The following table shews the average yearly value of exports to principal countries during each quinquennial period from 1887 to 1906 and for the year 1910. As in the case of the import trade, considerable alteration in the direction of exports is evident. The largest increases in exports to British possessions are shewn to the South African Union and to India and Ceylon. During the South African war large shipments of gold were sent from the Commonwealth to that country, and the decline in the value of the exports to South Africa during 1910 is due to the cessation of these shipments together with a decline in the exports of timber. The value of exports to India and Ceylon is also mainly of gold, of which exceptionally heavy shipments were made during 1904 and 1905. The large increases in the case of Belgium,



Germany, and France are probably more apparent than real, being mainly due to the increase in local sales of wool, skins, etc., and the resulting direct export to the countries mentioned, while formerly a much larger proportion of wool, etc., was sent to the United Kingdom for sale, and ultimately found its way from there to the Continent. The figures given below, however, do not, even now, denote the total purchases by European countries of Australian produce, as large quantities are still distributed from London.

### TRADE OF COMMONWEALTH WITH VARIOUS COUNTRIES, 1887 to 1910.

EXPORTS (INCLUDING BULLION AND SPECIE).

Country.	Yearly Average of Quinquennial Periods.				Year 1910.
	1887-91.	1892-6.	1897-1901.	1902-6.	
	£	£	£	£	£
United Kingdom ...	22,003,741	23,030,779	25,337,456	25,461,689	37,698,312
British Possessions—					
Canada ...	503	12,793	77,627	172,757	100,398
Ceylon ...	87,404	434,081	1,188,136	4,249,831	631,225
Fiji ...	105,267	121,771	173,080	246,671	417,896
Hong Kong ...	415,885	489,987	375,559	579,829	693,751
India ...	735,701	404,986	1,220,179	3,336,387	1,535,372
Mauritius ...	105,764	54,890	36,992	52,075	43,674
New Zealand ...	748,444	987,718	1,131,067	1,725,234	2,342,753
Papua ...	12,677	17,682	46,150	46,744	120,902
South African Union ...	166,284	181,271	2,513,075	3,180,034	1,826,032
Straits Settlements ...	107,523	105,040	103,742	209,612	544,815
Other British Possessions ...	6,770	10,128	30,438	76,953	66,668
Total British Possessions	2,492,222	2,820,347	6,896,045	13,876,127	8,323,486
Total British Countries ...	24,495,963	25,851,126	32,233,501	39,337,816	46,021,798
Foreign Countries—					
Argentine Republic ...	...	195	20,938	30,485	95,047
Belgium ...	1,341,908	1,422,378	1,488,785	2,695,512	5,949,060
Chile and Peru ...	116,931	155,666	239,390	473,649	591,686
China ...	43,884	23,778	208,601	242,580	114,051
France ...	663,672	2,064,639	2,641,244	4,190,591	8,551,579
Germany ...	559,697	1,580,692	2,128,596	3,406,633	7,340,455
Hawaiian Is., New Britain, New Caledonia, New He- brides and South Sea Is.	275,892	227,754	349,922	350,796	537,748
Italy ...	16,136	44,954	177,742	156,913	377,521
Japan ...	8,950	48,232	138,686	580,670	657,057
Java ...	57,921	70,582	125,285	157,559	345,315
Netherlands ...	18,013	45,008	69,634	226,958	371,453
Norway ...	6	971	105	14	1,854
Philippine Islands ...	117,471	24,664	150,999	331,047	473,268
Spain ...	10,692	7,047	12,835	61,900	674
Sweden ...	4	1,433	1,485	3,915	2,375
United States of America ...	1,642,587	1,263,128	3,941,509	2,591,428	1,599,102
Other Foreign Countries ...	77,826	234,656	510,600	408,116	1,461,107
Total Foreign Countries	4,951,590	7,215,777	12,206,356	15,908,166	28,469,352
Total ...	29,447,553	33,066,903	44,439,857	55,245,982	74,491,150

If each item be expressed as a percentage on the total export, the results will be as follows:—

**COMMONWEALTH EXPORTS.—PERCENTAGES OF THE EXPORT TO EACH COUNTRY  
ON THE TOTAL EXPORTS, 1887 to 1910.**

Country.	1887-91.	1892-6.	1897-1901.	1902-6.	1910.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom ...	74.74	69.65	57.01	46.09	50.61
British Possessions—					
Canada ...	0.00	0.04	0.18	0.32	0.13
Ceylon ...	0.30	1.31	2.67	7.69	0.85
Fiji ...	0.36	0.37	0.39	0.45	0.56
Hong Kong ...	1.41	1.48	0.85	1.05	0.93
India ...	2.50	1.23	2.75	6.04	2.06
Mauritius ...	0.36	0.17	0.08	0.09	0.06
New Zealand ...	2.54	2.99	2.55	3.12	3.14
Papua ...	0.04	0.05	0.10	0.08	0.16
South African Union ...	0.57	0.54	5.65	5.75	2.46
Straits Settlements ...	0.36	0.32	0.23	0.38	0.73
Other British Possessions ...	0.02	0.03	0.07	0.14	0.09
Total British Possessions	8.46	8.53	15.52	25.11	11.17
Total British Countries ...	83.20	78.18	72.53	71.20	61.78
Foreign Countries—					
Argentine Republic ...	...	...	0.05	0.06	0.13
Belgium ...	4.58	4.30	3.35	4.88	7.99
Chile and Peru ...	0.39	0.47	0.54	0.86	0.79
China ...	0.15	0.07	0.47	0.44	0.15
France ...	2.25	6.24	5.94	7.59	11.48
Germany ...	1.90	4.78	4.79	6.17	9.86
Hawaiian Is., New Britain, New Caledonia, New He- brides and South Sea Is.	0.93	0.69	0.79	0.63	0.72
Italy ...	0.05	0.14	0.40	0.28	0.51
Japan ...	0.03	0.15	0.31	1.05	0.88
Java ...	0.19	0.21	0.28	0.28	0.46
Netherlands ...	0.06	0.14	0.16	0.41	0.50
Norway ...	...	...	...	...	...
Philippine Islands ...	0.40	0.07	0.34	0.60	0.64
Spain ...	0.03	0.02	0.03	0.11	...
Sweden ...	...	0.01	...	0.01	...
United States of America ...	5.58	3.82	8.87	4.69	2.15
Other Foreign Countries ...	0.26	0.71	1.15	0.74	1.96
Total Foreign Countries...	16.80	21.82	27.47	28.80	38.22
Total ...	100	100	100	100	100

9. Exports to the United Kingdom.—Notwithstanding an increase of 71.33 per cent. in the actual value of exports to the United Kingdom during the year 1910 as compared

with the yearly average of the period 1887-91, the proportion of the total exports despatched to the United Kingdom has fallen from 74.74 per cent. in the earlier period to 50.61 per cent. in the year 1910. This decrease is, to some extent, undoubtedly due to the fact that wool and other commodities which were formerly despatched to the United Kingdom, and distributed from that centre, are now to a greater extent shipped direct to continental ports.

The principal exports to the United Kingdom during the year 1910 were as follows:—Butter, £3,597,173; fruit—apples, £194,732, other, including pulp, £15,597; grain—wheat, £7,558,893; flour, £209,573, other, £35,350; hair, £24,871; jewellery and precious stones, £211,623; leather, £316,802; meat, frozen—beef, £967,662, mutton, £1,274,804, lamb, £795,128, rabbits and hares, £481,547, other frozen meat, £43,010; potted meat, £94,890; meat, preserved in tins, £507,939; minerals and metals—copper—concentrates, £68,233, ingots, £82,854, in matte, £943,728, ore, £70,187; gold—bullion, £1,236,088, in matte, £492,972, ore, £32,881; silver—bullion, £21,209, in matte, £263,272, silver and silver-lead—concentrates, £10,725, ore, £37,870; lead—pig, £453,585, in matte, £278,427; ores, other, £51,846; spelter and concentrates, £72,783; tin, ingots and ore, £526,712; oil, cocoanut, £151,945; pearlshell, £209,657; skins—hides, £294,702, rabbit and hare, £407,706, sheep, £747,244, other skins, £547,258; specie, gold, £511,810, tallow, £1,659,694, timber, £77,575; wine, £91,654; wool—greasy, £9,047,845, scoured £2,399,514.

10. **Exports to British Possessions.**—The value of exports to British Possessions during 1910 is the lowest recorded since 1901, having declined from a yearly average of £13,876,127 during the years 1902-6 to £8,323,486 in 1910. This decline is due to reduced exports of gold, which fell from an average of £8,396,113 during the years 1902-6 to £2,285,840 in 1910. The shipments of gold to India, Ceylon, and South Africa were in some years very large, being particularly heavy during the quinquennium 1902-6. If, therefore, this element of the export trade be eliminated, it will be seen that the sales of merchandise to British Possessions have been materially increased.

#### 11. Principal Exports to British Possessions, 1910.—These are as follows:—

(i.) *Canada.* Butter, £26,967; meats, £30,545; oil, cocoanut, £1773; skins, £13,852; timber, undressed, £7038; wool, £10,695.

(ii.) *Ceylon.* Butter, £8459; horses, £7486; specie, £235,000; grain—flour, £19,370; lead, pig, £36,612; silver, bullion, £276,890; soap, £12,462; sugar, £1670.

(iii.) *Fiji.* Apparel and textiles—apparel, including boots and shoes, £20,878; textiles, £15,095; bags, sacks, and cordage, £6577; biscuits, £22,489; coal, £17,909; drugs and chemicals, £12,428; grain, prepared—bran, pollard, and sharps, £19,744; flour, £15,657; machines and machinery, £13,398; metal manufactures, £57,716; oils, £5788; specie, £39,450; timber, £13,733; vessels, £18,500.

(iv.) *Hong Kong.* Butter, £21,767; coal, £5321; fish, £18,547; flour, £16,144; gold bullion, £10,436; lead, pig, £66,997; sandalwood, £71,672; specie, gold, £431,846; timber, undressed, £19,590.

(v.) *India.* Coal, £32,753; copper, ingots, £8959; gold, bullion, £675,221; specie, £61,609; horses, £171,862; hay and chaff, £8027; lead, pig, £20,105; meats, £11,631; silver bullion, £158,820; tallow, £3482; timber, £305,105; wool, £24,268.

(vi.) *New Zealand.* Apparel, textiles, etc.:—apparel—boots and shoes, £8418; other apparel, £27,415; textiles, £64,121; bags and sacks, £2005; bark, tanning, £25,036; books and periodicals, £51,689; cameras, magic lanterns, etc., £26,051; coal, £117,982; copper, ingots, £3972; drugs and chemicals—fertilisers, £89,871; medicines, £35,652; other drugs, etc., £39,609; electrical materials, £12,981; fodders, £17,078; fruit, fresh £55,475, dried, £7042; glass and glassware, £10,760; grain—flour, £27,411; rice, £34,140; horses, £12,403; indiarubber manufactures, £72,977; iron, pig, £3388; jewellery and precious stones, £15,188; lead, pig, £20,814; leather and leather manufactures, £50,707; metals, manufactures of—agricultural implements and machinery, £18,130; other machines and machinery, £73,452; other manufactures of metals, £77,031; oils, etc., £17,999; onions, £10,132; plants, trees, and bulbs, £8857; potatoes, £31,024; salt, £12,545; seeds, £9169; soap, £27,102; specie—gold, £601,108; spirits, £21,169; stationery, £35,496; sugar, £7641; tea, £77,381; timber, £161,371; tin, ingots, £19,390; tobacco, £76,625; wine, £26,898.

(vii.) *Papua.* Apparel and textiles, etc., £11,473; flour, £2003; meats, £11,711; specie, £9853; tobacco, £10,201.

(viii.) *South African Union.* Animals, living—sheep, £20,248; butter, £97,733; fruits—fresh, £6443; other, £5855; grain—wheat, £755,267; flour, £256,066; jams and jellies, £13,031; leather, £102,277; meats, frozen beef, £36,559, mutton and lamb, £28,935, other meats, £21,354; oil, cocoanut, £10,140; seeds, £4898; specie, gold, £225,000; sugar, £63,402; tallow, unrefined, £50,150; timber, £82,340.

(ix.) *Straits Settlements.* Butter, £23,400; coal, £72,578; grain, flour, £113,921; horses, £21,185; machines and machinery, £10,944; meats, £32,264; tin ore, £194,066; tin concentrates, £34,438.

**12. Exports to Foreign Countries.**—The foregoing table shews a very great increase in the value of exports to foreign countries, both in actual amounts and in relation to total exports. The value of exports to foreign countries during 1910 shews an increase of 475 per cent. over similar figures for the years 1887-91, thus increasing the proportion per cent. of all exports from 16.80 per cent. in the earlier years to 38.22 per cent. in 1910. This increase is chiefly due to the direct consignment of wool and other produce to European countries, instead of distributing from London, as in the earlier years. A striking feature in this table is the lack of expansion of exports to the United States. From the figures given in the table, it would appear that the sales to the United States were less in 1910 than in 1887-91. These figures, however, include gold bullion and specie, which in 1910 amounted to only £50, compared with an average of nearly £3,000,000 per annum during the quinquennium 1897-1901, and about £1,300,000 during the period 1902-6.

**13. Principal Exports to Foreign Countries, 1910.**—These are as follows:—

(i.) *Argentine Republic.* Agricultural implements and machinery, £73,937; timber, £20,385.

(ii.) *Belgium.* Bark, tanning, £15,815; copper, £410,294; grain, wheat, £241,046; lead, £8801; leather, £23,575; silver ore, £62,321, concentrates, £472,586; hides and skins, £422,537; tallow, £47,479; timber, £24,870; tin, £47,142; wool, £3,084,847; zinc ore, £20,435, concentrates, £1,026,434.

(iii.) *Chile.* Coal, £303,627; wheat, £19,980.

(iv.) *China*. Butter, £19,352; coal, £1245; copper, £18,469; flour, £6094; lead, £24,661; sandalwood, £7332; specie, gold, £18,280; timber, undressed, £2699.

(v.) *Egypt*. Butter, £14,714; flour, £2965; meats—beef, £14,582, mutton, £4385, other meats, £1131; timber, undressed, £104,600.

(vi.) *France*. Concentrates—silver, £40,900, zinc, £215,068, copper, £119,647; hides and skins, £920,885; lead, £28,250; ores, £38,131; tallow, £31,059; wool, £6,962,057.

(vii.) *Germany*. Bark, tanning, £70,442; concentrates—silver, £16,295; zinc, £150,358; copper, £238,419; fruit, fresh, £28,242; grain—bran, pollard, and sharps, £3911, wheat, £71,090; hides and skins, £211,861; lead, £17,700; linseed cake and oilcake, £4750; meats, preserved in tins, £16,303; oil, cocoanut, £22,236; ores—scheelite, £7857, silver and silver lead, £135,393, wolfram, £62,714, other ores, £20,221; sausage casings, £72,044; tallow, £27,666; timber, £18,639; tin ingots, £13,806; wool, £6,053,873.

(viii.) *Italy*. Copper, £42,540; grain—wheat, £11,730; lead, £20,630; skins, £58,200; tallow, £39,225; wool, £177,617.

(ix.) *Japan*. Butter, £5383; grain, wheat, £49,379; lead, £77,493; manures, £34,052; oils, £8357; tallow, £7112; wool, £420,622.

(x.) *Java*. Butter, £61,366; coal, £47,856; fertilisers, £6804; flour, £166,177; horses, £10,524; meats, £9511; specie, gold, £5000.

(xi.) *Netherlands*. Butter, £17,091; concentrates—silver, £81,935, zinc, £93,514; silver ore, £145,882; tallow, £13,032.

(xii.) *Peru*. Coal, £22,989; wheat, £243,932.

(xiii.) *Philippine Islands*. Butter, £30,867; coal, £105,195; flour, £87,668; fodder, £14,412; horses, £14,971; meats—bacon and hams, £10,087, beef, £126,719, mutton, £7878, pork, £6867, other meats, £2648; timber, £21,132.

(xiv.) *United States of America*. Coal, £111,115; copper, £252,872; gold, in matte, £56,353; hides and skins, £309,370; pearlshell, £112,151; silver in matte, £32,582; tin, £69,118; wool, £580,000.

## § 6. Development of Export Trade to Eastern Countries.

1. *Trade with Eastern Countries*.—During recent years attention has been given by Australian exporters to the possibilities of the markets of Eastern countries. Commissioners have been sent by the States to Eastern trade centres to investigate and advise as to the requirements of these markets in regard to such commodities as Australia is prepared to supply, but a survey of the export returns of the past six years discloses a very small expansion in the value of the export of merchandise in the direction indicated.

The principal countries concerned in this trade are China, India, Ceylon, Japan, Java, Philippine Islands, Straits Settlements, and Hong Kong, and the particulars given in the following tables apply to these countries only:—

**VALUE OF PRINCIPAL ITEMS OF MERCHANDISE EXPORTED FROM THE  
COMMONWEALTH TO EASTERN COUNTRIES, 1905 to 1910.**

Article.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
Butter ... ..	93,707	109,792	136,299	151,984	166,046	171,372
Coal ... ..	260,343	336,550	319,292	501,002	293,584	265,011
Copper ... ..	426,937	177,251	250,461	239,646	43,255	29,080
Grain and pulse—						
Wheat ... ..	99,628	109,212	173,528	111,885	68,558	49,596
Flour ... ..	298,606	538,177	692,879	295,645	359,877	421,444
Other (prepd. & unprepd.)	58,858	8,874	17,614	10,536	17,690	21,603
Hay, chaff, and comp. fodder	44,353	21,075	34,549	29,554	30,684	31,838
Horses ... ..	329,515	232,102	302,809	199,239	165,370	227,848
Lead ... ..	131,223	177,166	179,346	203,799	115,310	230,461
Meats ... ..	213,567	184,975	188,197	248,799	206,759	229,461
Sandalwood ... ..	38,793	70,579	66,309	77,468	45,120	88,624
Skins, hoofs, sinews, tallow	55,675	72,284	71,758	43,167	46,428	28,158
Tin ore ... ..	38,466	91,743	187,702	205,114	186,191	194,066
Timber, undressed ...	387,408	490,600	362,999	367,322	447,347	351,830
Wool ... ..	156,372	292,079	501,886	147,416	281,537	444,890
Other merchandise...	337,182	208,719	304,769	338,097	270,433	336,470
<b>Total merchandise ...</b>	<b>2,970,633</b>	<b>3,121,178</b>	<b>3,790,397</b>	<b>3,170,674</b>	<b>2,744,189</b>	<b>3,121,752</b>
<b>Specie &amp; gold &amp; silver bullion</b>	<b>6,466,358</b>	<b>7,339,865</b>	<b>6,059,490</b>	<b>4,014,545</b>	<b>4,394,792</b>	<b>1,873,102</b>
<b>Total exports ... ..</b>	<b>9,436,991</b>	<b>10,461,043</b>	<b>9,849,887</b>	<b>7,185,219</b>	<b>7,138,981</b>	<b>4,994,854</b>

From the above table it will be seen that the value of merchandise shipped to Eastern countries during 1910, though somewhat greater than in 1909, is still much below the trade of 1907, when it reached its greatest magnitude. With the exception of butter the trade shows very material fluctuations from year to year both in regard to value and to its distribution among the markets. The trade in flour, which is hampered by the uncertainty of supplies, shews good progress during the last three years. The exports of timber (mainly to India) are much below those of 1909, while the value of wool (almost entirely to Japan) is greater than in any previous year, except 1907.

The following tables shew the value of the principal articles exported to each of the undermentioned Eastern countries during each of the years 1904 to 1910:—

**VALUE OF COMMONWEALTH EXPORTS OF MERCHANDISE TO PRINCIPAL EASTERN  
COUNTRIES, 1904 to 1910.**

Country.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£
China ... ..	314,437	399,783	216,690	404,501	264,563	116,236	95,771
India and Ceylon ... ..	572,073	759,506	983,156	825,037	901,983	745,629	759,057
Japan ... ..	581,086	581,155	510,138	706,279	267,963	432,692	657,057
Java... ..	130,958	170,238	210,101	274,910	260,344	290,703	340,315
Philippine Islands ...	297,299	407,610	436,389	570,528	604,089	531,438	473,268
Straits Settlements ...	149,658	190,295	401,722	549,402	575,911	444,611	544,815
Hong Kong ... ..	253,452	462,046	362,982	459,740	295,821	182,880	251,469
<b>Total ... ..</b>	<b>2,298,963</b>	<b>2,970,633</b>	<b>3,121,178</b>	<b>3,790,397</b>	<b>3,170,674</b>	<b>2,744,189</b>	<b>3,121,752</b>

**BUTTER.**

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	9,966	14,518	13,338	11,207	17,397	19,352
Hong Kong ...	17,073	17,007	15,443	21,713	19,696	21,767
India and Ceylon ...	5,615	7,152	6,766	8,627	7,373	9,239
Japan ...	2,233	4,475	6,464	7,063	4,375	5,383
Java ...	26,533	29,886	45,600	39,583	54,267	61,366
Philippine Islands ...	21,984	25,431	23,040	46,447	42,402	30,865
Straits Settlements...	10,303	11,323	25,648	17,344	20,536	23,400
Total...	93,707	109,792	136,299	151,984	166,046	171,372

The exports of butter given above for the year 1910 were shipped from the several States as follows:—New South Wales, £43,017; Victoria, £92,627; Queensland, £34,309; South Australia, £1419.

**COAL.**

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	16,643	31,652	18,474	20,041	7,470	1,245
Hong Kong ...	38,231	26,237	26,572	39,040	17,908	5,321
India and Ceylon ...	31,129	18,610	30,333	94,617	34,205	32,753
Japan ...	7,019	...	2,650	...	...	63
Java ...	20,881	30,848	18,893	44,614	34,132	47,856
Philippine Islands...	111,665	133,032	155,430	190,920	121,668	105,195
Straits Settlements...	34,775	96,171	66,940	111,770	73,201	72,578
Total ...	260,343	336,550	319,292	501,002	293,584	265,011

The increase in the exports of coal since 1905 is really greater than appears from the above figures, as prior to 1906 "bunker" coal was treated as an export to the country for which the ship cleared. These exports of coal are chiefly from New South Wales. The exports of coal during 1909 and 1910 would, doubtless, have been greater but for the coal miners' strike in November, 1909. Mr. J. B. Suttor, Commercial Commissioner for New South Wales in the East, in his report for 1909, says that, owing to the uncertainty of deliveries from Australia, in consequence of labour troubles, the time is far distant when the trade will again reach the dimensions of recent years.

**COPPER.**

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	257,800	34,297	148,979	172,196	23,100	18,469
Hong Kong ...	33,942	4,400	15,401	...	8,500	1,120
India and Ceylon ...	133,231	117,322	85,096	62,011	6,800	8,959
Japan ...	...	19,966	470	1,465	145	...
Java ...	1,964	1,266	515	2,334	318	...
Straits Settlements...	...	...	...	1,640	4,392	...
Philippine Islands ...	...	...	...	...	...	532
Total ...	426,937	177,251	250,461	239,646	43,255	29,080

The copper exported to the East during 1910 was shipped entirely from New South Wales.

## GRAIN AND PULSE—WHEAT.

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	...	1,662	103,593	...	10	18
Hong Kong ...	4,530	519	12,225	...	...	14
India and Ceylon ...	45	100,211	6,828	111,872	22,414	162
Japan ...	95,046	6,623	50,881	13	12,694	49,379
Java ...	6	16	1	...	34	17
Philippine Islands ...	1	181	...	...	33,404	...
Straits Settlements...	...	...	...	...	2	6
Total ...	99,628	109,212	173,528	111,885	68,558	49,596

The exports of wheat given above for the year 1910 were shipped from the following States:—New South Wales, £37,686; Victoria, £11,897; Queensland £7; Western Australia, £6.

## GRAIN AND PULSE—FLOUR.

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	3,129	4,539	47,037	3,221	2,671	6,094
Hong Kong ...	77,181	146,257	194,223	4,449	15,462	16,144
India and Ceylon ...	15,865	18,479	18,349	24,368	23,412	23,857
Japan ...	11,897	35,325	3,820	9	2,946	7,583
Java ...	93,444	107,319	144,091	119,397	132,908	166,177
Philippine Islands ...	49,887	95,569	139,958	90,653	117,825	87,668
Straits Settlements...	47,203	130,689	145,401	52,518	64,653	113,921
Total ...	298,606	538,177	692,879	294,615	359,877	421,444

The flour exported during 1910, as above, was shipped from the several States as follows:—New South Wales, £154,839; Victoria, £133,236; Queensland, £309; South Australia, £117,036; Western Australia, £16,024.

## GRAIN AND PULSE, OTHER THAN WHEAT AND FLOUR.

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	635	452	3,423	226	21	759
Hong Kong ...	18,686	257	1,015	81	149	95
India and Ceylon ...	3,216	3,199	6,880	6,144	7,451	9,687
Japan ...	33,283	21	88	152	15	12
Java ...	395	890	1,563	1,380	1,735	2,086
Philippine Islands ...	2,265	3,614	3,675	1,847	7,651	8,115
Straits Settlements...	478	441	970	706	668	849
Total ...	58,858	8,874	17,614	10,536	17,690	21,603



The relatively large amount shewn in the last table for Japan for 1905 was chiefly due to exports of barley and oats. The exports given above for 1910 were shipped from the following States:—New South Wales, £4702; Victoria, £16,500; Queensland, £61; South Australia, £312; Western Australia, £28.

**HAY AND CHAFF AND COMPRESSED FODDERS.**

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	467	145	389	74	700	45
Hong Kong ...	21,050	61	1,023	387	61	149
India and Ceylon ...	6,083	7,840	12,065	8,777	8,321	11,204
Japan ...	123	294	302	560	19	3
Java ...	410	481	957	1,573	984	1,111
Philippine Islands	14,392	10,138	16,300	15,340	18,550	15,037
Straits Settlements	1,828	2,116	3,513	2,843	2,049	4,289
Total ...	44,353	21,075	34,549	29,554	30,684	31,838

The exports given above for the year 1910 were shipped from the several States as follows:—New South Wales, £2937; Victoria, £28,690; Queensland, £127; South Australia, £61; Western Australia, £23.

**HORSES.**

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	2,671	5,942	3,299	892	295	60
Hong Kong ...	119,504	160	205	545	888	...
India and Ceylon ...	147,427	191,089	230,187	141,486	128,887	179,348
Japan ...	30,215	1,990	11,715	12,234	60	1,860
Java ...	4,440	12,296	25,502	16,457	19,598	10,424
Philippine Islands ...	10,151	2,603	4,949	12,134	5,303	14,971
Straits Settlements...	15,107	18,022	26,952	15,491	10,339	21,185
Total ...	329,515	232,102	302,809	199,239	165,370	227,848

The horses exported to the above countries during 1910 were shipped from the following States:—New South Wales, £45,207; Victoria, £97,631; Queensland, £72,495; South Australia, £10,505; Western Australia, £2010.

**LEAD, PIG.**

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	29,734	18,880	20,529	28,456	13,716	24,661
Hong Kong ...	35,694	68,544	74,493	85,625	22,062	66,997
India and Ceylon ...	34,811	44,772	61,822	59,250	27,400	56,717
Japan ...	29,757	44,002	20,315	30,040	47,905	77,493
Java ...	...	41	...	106	198	...
Philippine Islands ...	127	927	330	298	4,029	4,553
Straits Settlements...	1,100	...	1,857	24	...	40
Total...	131,223	177,166	179,346	203,799	115,310	230,461

The above lead is almost entirely from the Broken Hill mines of New South Wales.

**MEATS—PRESERVED BY COLD PROCESS.**

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	99	...	...	261	1,099	...
Hong Kong ...	7,819	4,379	7,051	7,746	5,332	7,373
India and Ceylon ...	2,887	4,137	4,455	3,581	1,916	4,252
Japan ...	423	2,426	435	5,391	1,342	445
Java ...	...	3	884	2,539	949	920
Philippine Islands ...	153,825	127,621	126,498	181,460	139,260	143,561
Straits Settlements...	14,062	12,679	20,746	18,376	21,320	25,849
Total...	179,115	151,245	160,069	219,354	171,218	182,420

The exports to the above-mentioned Eastern countries during 1910 of meats preserved by cold process were shipped from the following States:—New South Wales, £20,955; Victoria, £891; Queensland, £160,574. In addition to the meat included in the above table, meat preserved by cold process to the value of £112,025 in 1906, £115,000 in 1907, and £70,358 in 1908 was exported to Asiatic Russia.

**MEATS OTHER THAN MEATS PRESERVED BY COLD PROCESS.**

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	1,275	4,804	4,107	2,367	2,841	5,205
Hong Kong ...	4,279	815	890	622	1,249	1,853
India and Ceylon ...	13,520	15,859	8,211	10,054	16,267	12,936
Japan ...	7,410	1,284	1,376	1,076	1,104	1,137
Java ...	2,678	3,516	4,501	6,224	5,889	8,591
Philippine Islands ...	3,702	4,581	6,943	7,391	6,531	10,707
Straits Settlements	1,588	2,871	2,100	1,711	1,660	6,612
Total	34,452	33,730	28,128	29,445	35,541	47,041

The exports given above for the year 1910 were shipped from the following States:—New South Wales, £3753; Victoria, £1252; Queensland, £41,624; South Australia, £412.

**SANDALWOOD.**

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	7,008	9,299	10,886	6,238	12,180	7,332
Hong Kong ...	27,306	55,970	51,078	65,937	25,546	71,672
India and Ceylon ...	...	1,589	1,803	5,604	2,358	6,301
Straits Settlements	4,479	3,721	2,542	589	5,036	3,319
Total	38,793	70,579	66,309	77,468	45,120	88,624

These exports of sandalwood in 1910 were shipped from Queensland, £17,850; and Western Australia, £70,774.

## SKINS, HOOFS, HORNS, BONES, SINEWS AND TALLOW.

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	...	15	77	14	36	...
Hong Kong ...	1,421	1,260	838	1,706	779	401
India and Ceylon ...	5,334	11,847	8,754	5,319	2,958	3,485
Japan ...	48,244	56,164	60,285	35,459	40,363	23,145
Java ...	63	1,495	41	315	1,305	337
Philippine Islands ...	369	1,211	1,012	91	626	389
Straits Settlements	244	292	751	263	361	401
Total ...	55,675	72,284	71,758	43,167	46,428	28,158

The above exports of skins, etc., in 1910 were shipped from the several States as follows:—New South Wales, £8218; Victoria, £13,635; Queensland, £6305.

## TIN ORE.

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
Straits Settlements	38,466	91,743	187,702	205,114	186,191	194,066

The export of tin ore to the Straits Settlements—the centre of the world's tin production—is for the purpose of treatment, and was shipped from the several States during 1910 as follows:—New South Wales, £117,837; Victoria, £10,200; Queensland, £44,295; Western Australia, £21,734.

## TIMBER UNDRESSED.

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	54,817	81,756	19,397	13,060	26,606	2,699
Hong Kong ...	958	6	2,739	29,015	30,298	19,590
India and Ceylon ...	306,405	386,611	267,376	278,372	379,349	307,001
Japan ...	1,042	3,090	6,202	4,332	1,296	781
Java ...	82	70	330	251	56	307
Philippine Islands ...	22,152	12,556	65,046	30,849	3,372	21,132
Straits Settlements...	1,952	6,511	1,909	11,443	6,370	320
Total ...	387,408	490,600	362,999	367,322	447,347	351,830

The above exports of timber during 1910 from the several States were shipped as follows:—New South Wales, £77,211; Victoria, £779; Queensland, £5778; Western Australia, £259,522; Tasmania, £8510.

## WOOL.

Country.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£
China ...	...	...	...	300	250	...
Hong Kong ...	7,740	...	...	...	...	...
India, and Ceylon ...	7,928	12,084	20,115	21,708	16,657	24,268
Japan ...	140,704	279,860	481,771	125,408	264,630	420,622
Philippine Islands ...	...	135	...	...	...	...
Total...	156,372	292,079	501,886	147,416	281,537	444,890

The wool exported to the East by the several States during 1910 was shipped as follows:—New South Wales, £369,725; Victoria, £24,137; Queensland, £51,028.

## § 7. Trade of Commonwealth since Federation.

1. **Classified Summary of Australian Trade.**—The tables hereunder present the trade of the Commonwealth during each of the years 1901 and 1906 to 1910, arranged in classes according to the nature of the goods.

It was long ago pointed out<sup>1</sup> that the statistical presentation of imports and exports would be increased in value by being properly arranged under categories (classes and orders). The following arrangement has been adopted, viz.:—

## STATISTICAL CLASSIFICATION OF IMPORTS AND EXPORTS.

Class.	Articles.
I.	FOODSTUFFS of animal origin, excluding, however, living animals.
II.	FOODSTUFFS of vegetable origin, and common salt.
III.	BEVERAGES, non-alcoholic only, and the substances used in making them.
IV.	SPIRITS AND ALCOHOLIC LIQUORS, including spirits for industrial purposes, and such pharmaceutical preparations as are dutiable as spirits.
V.	TOBACCO, and all preparations thereof.
VI.	LIVE ANIMALS.
VII.	ANIMAL SUBSTANCES, mainly unmanufactured, which are not foodstuffs.
VIII.	VEGETABLE SUBSTANCES and non-manufactured fibres.
IX.	APPAREL, TEXTILES, and various manufactured fibres.
X.	OILS, FATS, AND WAXES.
XI.	PAINTS AND VARNISHES.
XII.	STONES AND MINERALS, used industrially.
XIII.	SPECIE, gold, silver, and bronze.
XIV.	METALS, UNMANUFACTURED, and ores.
XV.	METALS, PARTLY MANUFACTURED.
XVI.	METALS, MANUFACTURED, including machinery.
XVII.	LEATHER AND MANUFACTURES of leather, together with all substitutes therefor, and also INDIARUBBER AND INDIARUBBER MANUFACTURES.
XVIII.	WOOD AND WICKER, both raw and manufactured.
XIX.	EARTHENWARE, CEMENTS, CHINA, GLASS AND STONWARE.
XX.	PAPER AND STATIONERY.
XXI.	JEWELLERY, TIMEPIECES, AND FANCY GOODS.
XXII.	OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS.
XXIII.	DRUGS, CHEMICALS, AND FERTILISERS.
XXIV.	MISCELLANEOUS.

1. By R. M. Johnston, I.S.O., the Statistician of the State of Tasmania.

**COMMONWEALTH IMPORTS ARRANGED IN CLASSES, 1901 and 1906 to 1910.**

Classes.	1901.	1906.	1907.	1908.	1909.	1910.
I. Animal foodstuffs, etc. ....	£ 793,365	£ 697,830	£ 688,642	£ 834,542	£ 751,044	£ 873,697
II. Vegetable " " " "	2,925,985	1,798,913	1,574,933	2,192,674	2,741,811	1,944,050
III. Beverages (non-alcoholic), etc. ...	1,054,324	1,206,216	1,549,785	1,232,292	1,409,713	1,646,052
IV. Alcoholic liquors, etc. ....	1,845,438	1,388,671	1,556,224	1,575,151	1,496,952	1,654,237
V. Tobacco, etc. ....	717,915	620,812	753,869	778,314	616,221	769,470
VI. Live animals " " " "	40,306	118,307	114,787	108,067	113,724	337,400
VII. Animal substances, etc. ....	124,017	456,071	576,554	400,748	336,981	730,634
VIII. Vegetable " " " "	149,361	717,715	863,603	944,233	997,205	1,120,045
IX. Apparel, etc. ....	12,065,367	13,508,544	15,367,604	13,844,687	14,705,738	17,438,605
X. Oils, etc. ....	1,290,252	1,023,410	1,192,177	1,190,816	1,337,429	1,596,643
XI. Paints, etc. ....	385,049	352,356	445,769	419,809	416,418	481,392
XII. Stones, etc. ....	131,095	91,676	127,372	119,248	164,069	469,598
XIII. Specie " " " "	172,395	230,367	406,675	239,088	54,197	374,484
XIV. Metals, unmanufactured, ores, etc. ....	984,327	2,381,566	1,763,202	1,178,534	1,232,610	1,221,721
XV. Metals, part manufactured " " " "	1,062,309	646,179	797,354	749,036	741,184	1,085,864
XVI. Metals, manufactured " " " "	7,491,636	7,392,675	10,531,166	10,171,607	10,372,019	13,074,821
XVII. Leather, etc. ....	523,565	924,968	1,004,822	932,033	1,080,222	1,303,134
XVIII. Wood, etc. ....	1,814,382	1,698,766	2,100,395	2,343,862	2,060,231	2,583,065
XIX. Earthenware, etc. ....	925,101	688,510	863,949	855,855	791,705	1,015,313
XX. Paper, etc. ....	1,731,330	1,838,474	2,071,344	2,234,930	2,098,638	2,457,216
XXI. Jewellery, etc. ....	1,065,348	1,045,164	1,261,046	1,102,644	1,203,528	1,428,029
XXII. Instruments, etc. ....	218,437	285,771	379,300	390,140	412,547	444,990
XXIII. Drugs, etc. ....	1,472,162	1,732,543	1,840,933	1,916,680	1,744,023	2,186,005
XXIV. Miscellaneous " " " "	3,140,345	3,357,918	3,978,018	4,054,282	4,233,687	5,188,246
Grand total " " " "	42,433,811	44,744,912	51,809,033	49,799,273	51,171,896	60,014,351

The exports are shewn according to the same classification, and the usual distinction is made between exports of Australian produce and re-exports. It will be seen what a small proportion of the total exports is made up by re-exports, and that the latter consist largely of specie minted from imported gold.

**COMMONWEALTH EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING  
AUSTRALIAN AND THE PRODUCE OF OTHER COUNTRIES,  
1901 and 1906 to 1910.**

Classes.	1901.	1906	1907.	1908.	1909.	1910.
<b>AUSTRALIAN PRODUCE.</b>						
	£	£	£	£	£	£
I. Animal foodstuffs, etc. ....	4,104,196	5,648,049	5,726,153	4,841,315	5,473,619	8,791,463
II. Vegetable foodstuffs, etc. ....	4,633,926	6,663,267	6,866,279	4,710,815	8,440,099	11,884,299
III. Beverages (non-alcoholic), etc. ....	2,598	3,750	2,810	3,539	3,883	5,826
IV. Alcoholic liquors, etc. ....	134,630	107,899	134,011	112,621	133,992	137,826
V. Tobacco, etc. ....	5,030	40,444	67,612	83,142	76,594	67,226
VI. Live animals ....	473,601	315,043	369,417	263,737	206,485	306,724
VII. Animal substances, etc. ....	16,754,006	25,696,491	32,011,364	25,431,142	28,969,998	33,128,767
VIII. Vegetable substances, etc. ....	142,060	281,121	255,191	231,618	195,951	279,053
IX. Apparel, etc. ....	42,142	61,889	75,562	65,304	78,559	77,217
X. Oils, etc. ....	843,755	1,071,842	1,259,021	945,113	1,422,710	2,192,992
XI. Paints, etc. ....	620	3,237	5,433	3,347	4,682	5,871
XII. Stones, etc. ....	1,041,974	927,560	1,343,791	1,421,304	874,628	943,195
XIII. Specie ....	8,884,816	9,851,518	5,411,572	9,819,576	4,267,070	1,199,679
XIV. Metals, unmanufactd., ores, etc. ....	8,016,263	13,327,250	14,163,540	11,724,275	10,324,317	10,341,849
XV. Metals, part manufactured ....	3,802	22,239	11,049	25,568	7,570	8,922
XVI. Metals, manufactured ....	117,662	149,952	156,540	225,878	207,893	221,037
XVII. Leather, etc. ....	660,692	591,208	569,556	573,742	524,711	576,918
XVIII. Wood, etc. ....	666,024	1,009,607	802,194	1,038,256	1,033,336	1,020,917
XIX. Earthenware, etc. ....	6,600	26,708	33,053	31,052	14,453	13,284
XX. Paper, etc. ....	22,171	46,734	49,730	64,738	58,853	58,066
XXI. Jewellery, etc. ....	67,978	148,668	149,315	141,654	141,050	135,068
XXII. Instruments, etc. ....	507	1,832	2,766	5,613	6,867	6,922
XXIII. Drugs, etc. ....	86,299	168,972	209,297	212,421	211,297	243,885
XXIV. Miscellaneous ....	130,418	134,594	141,244	142,233	164,194	199,189
<b>Total</b> ....	<b>47,741,776</b>	<b>66,299,874</b>	<b>69,816,500</b>	<b>62,118,903</b>	<b>62,843,711</b>	<b>71,836,196</b>

EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE  
AND THE PRODUCE OF OTHER COUNTRIES, 1901 and 1906 to 1910.—Continued.

Classes.	1901.	1906.	1907.	1908.	1909.	1910.
OTHER PRODUCE.						
I. Animal foodstuffs, etc. ....	£ 35,291	£ 21,032	£ 20,750	£ 20,698	£ 21,872	£ 23,722
II. Vegetable foodstuffs, etc. ....	80,371	200,710	307,707	280,357	201,555	192,832
III. Beverages (non-alcoholic), etc. ....	43,308	63,419	72,647	62,285	82,138	91,514
IV. Alcoholic liquors, etc. ....	55,732	32,980	36,889	31,259	30,736	37,234
V. Tobacco, etc. ....	61,753	34,586	32,752	40,127	52,889	57,133
VI. Live animals ....	105	5,713	5,615	1,170	935	5,335
VII. Animal substances, etc. ....	10,070	12,730	9,565	7,401	3,423	7,363
VIII. Vegetable substances, etc. ....	17,625	14,709	18,688	16,172	19,888	18,483
IX. Apparel, etc. ....	171,014	198,098	203,950	229,070	205,936	200,870
X. Oils, etc. ....	42,282	44,783	42,546	65,324	39,134	38,394
XI. Paints, etc. ....	15,186	7,003	6,330	7,735	6,462	8,135
XII. Stones, etc. ....	2,043	1,863	2,179	2,308	2,041	2,779
XIII. Specie ....	846,921	2,087,901	1,474,225	660,882	1,069,221	1,047,758
XIV. Metals, ores, etc. ....	9,744	52,278	27,036	11,517	6,287	8,463
XV. Metals, part manufactured ....	13,806	58,991	54,811	20,602	32,666	32,994
XVI. Metals, manufactured ....	196,334	200,875	222,313	213,468	206,004	261,708
XVII. Leather, etc. ....	13,074	28,955	32,692	42,802	52,063	59,653
XVIII. Wood, etc. ....	32,135	34,436	47,791	36,627	30,095	37,290
XIX. Earthenware, etc. ....	23,337	22,756	26,037	15,982	12,328	16,839
XX. Paper, etc. ....	52,171	61,655	52,454	61,177	62,459	75,103
XXI. Jewellery, etc. ....	54,431	39,328	49,051	59,633	63,095	147,493
XXII. Instruments, etc. ....	13,555	21,660	32,108	54,775	55,742	54,125
XXIII. Drugs, etc. ....	42,976	45,735	47,511	48,220	46,786	51,154
XXIV. Miscellaneous ....	121,122	147,612	182,070	202,554	140,280	178,581
Total ... ..	1,954,396	3,437,889	3,007,747	2,192,155	2,475,125	2,654,955

## TOTAL EXPORTS.

	£	£	£	£	£	£
I. Animal foodstuffs, etc. ....	4,139,487	5,669,081	5,746,903	4,862,013	5,495,491	8,815,185
II. Vegetable foodstuffs, etc. ....	4,714,297	6,863,977	7,173,986	4,991,172	8,641,654	12,077,131
III. Beverages (non-alcoholic), etc. ....	45,906	67,169	75,457	65,824	86,021	97,340
IV. Alcoholic liquors, etc. ....	190,362	140,879	170,900	143,880	164,728	175,060
V. Tobacco, etc. ....	66,783	75,030	100,364	123,269	129,483	124,259
VI. Live animals ....	473,706	318,756	375,032	264,907	207,420	312,095
VII. Animal substances, etc. ....	16,764,076	25,709,281	32,020,929	25,438,543	28,973,421	33,136,130
VIII. Vegetable substances, etc. ....	159,685	295,830	273,879	247,790	215,839	297,536
IX. Apparel, etc. ....	213,156	259,987	279,512	294,374	284,495	278,087
X. Oils, etc. ....	886,047	1,116,625	1,301,567	1,010,437	1,461,844	2,231,386
XI. Paints, etc. ....	15,806	10,240	11,763	11,082	11,144	14,006
XII. Stones, etc. ....	1,044,017	929,443	1,345,970	1,423,612	877,569	945,974
XIII. Specie ....	9,731,737	11,939,459	6,885,797	10,480,458	5,366,291	2,247,437
XIV. Metals, unmanufactured, ores, etc. ....	8,926,013	13,379,488	14,190,576	11,735,792	10,330,604	10,350,812
XV. Metals, part manufactured ....	17,608	81,230	65,890	46,170	40,436	41,916
XVI. Metals, manufactured ....	313,996	350,828	378,853	439,346	413,897	482,745
XVII. Leather, etc. ....	673,766	620,163	602,248	616,544	576,764	636,571
XVIII. Wood, etc. ....	638,159	1,044,043	849,985	1,074,883	1,063,431	1,058,207
XIX. Earthenware, etc. ....	29,937	49,464	59,090	47,944	26,781	30,123
XX. Paper, etc. ....	74,342	108,389	102,184	125,915	121,312	133,169
XXI. Jewellery, etc. ....	122,409	187,996	198,366	201,287	205,045	282,561
XXII. Instruments, etc. ....	14,062	23,492	34,871	60,388	62,609	61,047
XXIII. Drugs, etc. ....	129,275	214,707	256,808	260,641	258,083	295,039
XXIV. Miscellaneous ... ..	251,540	282,206	323,314	344,787	304,474	367,770
Total ... ..	49,696,172	69,737,763	72,824,247	64,311,058	65,318,836	74,491,150

From the above table it will be seen that there has been a very substantial expansion in the principal divisions of the export trade of the Commonwealth. Compared with 1901 the exports in 1910 of animal foodstuffs, principally butter and meat, shew an increase of 112.96 per cent.; vegetable foodstuffs, principally wheat, shew an increase during the same period of 156.20 per cent.; animal substances—wool, skins, etc.—shew an increase of 97.67 per cent.; oils, fats, and waxes—mainly tallow—an increase of 151.82 per cent; and wood, etc. (timber) an increase of 51.55 per cent., while the exports of gold are the lowest recorded since 1892.

## § 8. Movement of Specie and Bullion.

1. **Specie and Bullion.**—The following tables shew the value of gold and silver bullion and specie, including bronze specie, imported and exported during the years 1901 and 1906 to 1910 :—

**COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND BULLION,  
1901 and 1906 to 1910.**

Items.	1901.	1906.	1907.	1908.	1909.	1910.
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**IMPORTS.**

Gold—Specie ...	£ 3,710	£ 81,790	£ 9,967	£ 14,426	£ 11,566	£ 26,008
Bullion ...	762,415	2,066,063	1,426,827	950,575	999,884	952,436
Total ...	766,125	2,147,853	1,436,794	965,001	1,011,450	978,444
Silver—Specie ...	158,656	140,764	375,937	209,564	32,337	332,054
Bullion ...	54	33,597	498	689	2,294	5,040
Total ...	158,710	174,661	376,435	210,253	34,631	337,094
Bronze—Specie ...	10,029	8,403	20,971	15,098	10,294	16,422
Grand total ...	934,864	2,330,917	1,834,200	1,190,352	1,056,375	1,331,960

**EXPORTS.**

Gold—Specie ...	£ 9,708,037	£ 11,915,685	£ 6,857,838	£ 10,438,665	£ 5,349,066	£ 2,178,123
Bullion ...	4,616,039*	4,955,600*	3,685,466	3,128,073	3,024,085	1,930,660
Total ...	14,324,076	16,871,285	10,543,304	13,566,738	8,373,151	4,108,783
Silver—Specie ...	23,370	23,521	25,667	39,781	16,374	69,134
Bullion ...	922,443†	814,874†	616,197	581,689	289,908	457,180
Total ...	945,813	838,395	641,864	621,470	306,282	526,314
Bronze—Specie ...	330	253	2,292	2,012	851	180
Total { Australian produce ...	14,423,298	15,584,836	9,713,190	13,526,398	7,580,153	3,587,201
Other produce ...	846,921	2,125,097	1,474,270	663,822	1,100,126	1,048,076
Grand total ...	15,270,219	17,709,933	11,187,460	14,190,220	8,680,284	4,635,277

\* Includes gold contained in matte. The value of gold contained in matte exported during 1907 was £350,601, during 1908, £761,100, during 1909, £524,183, and during 1910, £549,924. † Includes silver contained in matte. The value of silver contained in matte exported during 1907 was £576,959, during 1908, £489,460, during 1909, £370,329, and during 1910, £296,228.

**COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND GOLD AND SILVER  
BULLION FROM AND TO PRINCIPAL COUNTRIES, 1910.**

Country.	Imports.			Exports.		
	Specie.	Bullion.	Total.	Specie.	Bullion.	Total.
	£	£	£	£	£	£
United Kingdom ...	368,480	4,792	373,272	545,310	1,257,297	1,802,607
Ceylon ...	...	...	...	235,000	276,890	511,890
Fiji ...	...	...	...	39,450	...	39,450
Hong Kong ...	...	...	...	431,846	10,436	442,282
India...	...	...	...	61,609	834,041	895,650
New Zealand ...	5	896,426	896,431	604,728	8,251	612,979
Papua ...	...	55,387	55,387	9,853	...	9,853
South African Union ...	...	...	...	228,700	...	228,700
Other Countries ...	...	300	300	40	...	40
<b>Total British Countries</b>	<b>368,485</b>	<b>956,905</b>	<b>1,325,390</b>	<b>2,156,536</b>	<b>2,386,915</b>	<b>4,543,451</b>
China ...	...	...	...	18,280	...	18,280
South Sea Islands ...	5,002	...	5,002	61,370	...	61,370
Other Countries ...	997	571	1,568	11,251	925	12,176
<b>Total Foreign Countries</b>	<b>5,999</b>	<b>571</b>	<b>6,570</b>	<b>90,901</b>	<b>925</b>	<b>91,826</b>
<b>Grand total ...</b>	<b>374,484</b>	<b>957,476</b>	<b>1,331,960</b>	<b>2,247,437</b>	<b>2,387,840</b>	<b>4,635,277</b>

**2. Imports of Bullion and Specie.**—Of the total imports of bullion and specie into the Commonwealth during 1910, 71.51 per cent. was in the form of gold bullion, and was received almost entirely from New Zealand for the purpose of minting.

**3. Exports of Bullion and Specie.**—Of the total exports of bullion and specie during 1910 gold represented 88.64 per cent., 46.99 per cent. being in the form of specie, and 41.65 per cent. bullion.

The countries which appear as the largest recipients of gold from Australia are the United Kingdom, India, New Zealand, Hong Kong, Ceylon, and the South African Union, in the order named, but as large amounts of gold, recorded as exported to Ceylon, are shipped *under option*, and may be despatched thence to any country needing gold, the actual amount received by each country cannot be stated.

## § 9. Effects of Prices on the Values of Exports.

**1. Significance of Price in Totals.**—In comparing the value of exports from, and also imports into, any country for a series of years the question naturally arises as to how much any variation in the aggregate value is due to fluctuations in prices, and how much to increase or decrease of actual quantities, for, in aggregates expressed only in value—the only possible method when the commodities differ—the two sources of variation are confused.

The scheme of comparison followed hereinafter is that of the British Board of Trade. This is to select all such articles of export as are recorded by units of quantity, and to



apply to the quantities exported during each year the average price per unit ruling in some year, arbitrarily taken for the purposes of comparison as the basic year. The ratio which the total actually recorded for the year under review bears to the total obtained by applying to the quantities of the year under review the average prices ruling during the basic year, may be called the "price-level" of the latter—as compared with the former—for the group of commodities considered, and may be taken (so it is assumed in the method of the British Board of Trade) as a measure of the effect of the change of price in the intervening period. Since the value of the articles used in the calculations represents as much as 80 per cent. of all exports during 1910—after excluding specie and gold bullion, which are not subject to price changes—a fairly extensive basis on which an estimate of the effect of prices over the full range of exports can be founded is afforded.<sup>1</sup>

**2. Effect of Prices.**—The following table shews the values of exports as actually recorded in each year, together with the values computed on the assumption that the prices of 1901 were maintained.<sup>2</sup> The table also shews the yearly "price-levels," based upon the results so ascertained.

This table obviously furnishes a measure of the influence of prices on the value of exports of each year since 1901. Column IV.,—values computed on 1901 prices—represents the volume of exports (less specie and gold bullion), expressed in the common denomination of value, and from the figures therein it will be seen that, had the prices of 1901 remained constant, the value of the exports of merchandise during the year 1910, for example, would have been £56,571,308 only, instead of £70,313,053—the value actually recorded. The difference between these amounts (£13,741,745) results from a rise of 24.3 per cent. (i.e., from 1000 to 1243) in the price of commodities<sup>3</sup> for the period intervening between 1901 and 1910.

#### EFFECT OF PRICES ON THE VALUE OF COMMONWEALTH EXPORTS AND EXPORT PRICE-LEVELS FOR THE PERIOD 1901 to 1910.

(BASIC YEAR, 1901.)

Year.	Exports of Specie and Gold Bullion.	Other Exports.		Total Exports (including Specie and Gold Bullion).		Price Levels. <sup>1</sup> Year 1901 = 1000.
		Values as Recorded.	Values Computed on 1901 Prices.	Values as Recorded.	Values Computed on 1901 Prices.	
I.	II. £	III. £	IV. £	V. £	VI. £	VII.
1901 ...	14,347,776	35,348,396	35,348,396	49,696,172	49,696,172	1000
1902 ...	14,568,640	29,346,447	27,375,976	43,915,087	41,944,616	1072
1903 ...	18,408,702	29,841,410	26,697,120	48,250,112	45,105,822	1118
1904 ...	16,914,691	40,571,224	36,139,840	57,485,915	53,054,531	1123
1905 ...	10,977,111	45,863,924	38,465,210	56,841,035	49,442,321	1192
1906 ...	16,895,059	52,842,704	42,295,310	69,737,763	59,190,369	1249
1907 ...	10,571,263	62,252,984	47,557,141	72,824,247	58,128,404	1309
1908 ...	13,608,531	50,702,527	43,072,809	64,311,058	56,681,340	1177
1909 ...	8,390,376	56,928,460	46,973,200	65,318,836	55,363,576	1212
1910 ...	4,178,097	70,313,053	56,571,308	74,491,150	59,932,852	1243

1. These are index numbers for the total group of exports, excluding specie and gold bullion.

**3. Influence of Quantity and Price on Total Increased Value of Exports.**—The estimated actual and relative effects of the influence of—(i.) increase or decrease in the exports of specie and gold bullion, (ii.) increase or decrease of *quantities* of other exports, (iii.) variation of prices on the value of the exports, of each year compared with 1901, are shewn below :—

1. This basis is thus subject only to the limitations of the fundamental assumption and to its limitation to 80 per cent. of the total.
2. The method of the British Board of Trade is clearly valid for certain purposes, and is adopted because it widens the field of comparison. It is not, however, universally valid.
3. On the fundamental assumption.

**ANALYSIS OF INFLUENCE OF QUANTITY AND PRICE ON INCREASE OR DECREASE  
IN COMMONWEALTH EXPORTS, 1902 to 1910, COMPARED WITH 1901.**

Year.	Particulars.	Variation above (+) or below (—) 1901 Exports due to change in:—			Total Variation above (+) or below (—) Value of 1901 Exports.
		Export of Specie and Gold.	Quantity of Export other than Specie and Gold.	Prices of Export other than Specie and Gold.	
1902.	Variation, actual ... .. £	+220,864	—7,972,420	+1,970,471	—5,781,085
	Relative magnitude of variation. Total				
	variation taken as 100 ... ..	+3.82	—137.90	+34.08	—100
1903.	Variation, actual ... .. £	+4,060,926	—8,651,276	+3,144,290	—1,446,060
	Relative magnitude of variation. Total				
	variation taken as 100 ... ..	+280.81	—598.25	+217.44	—100
1904.	Variation, actual ... .. £	+2,566,915	+791,444	+4,431,384	+7,789,743
	Relative magnitude of variation. Total				
	variation taken as 100 ... ..	+32.95	+10.16	+56.89	+100
1905.	Variation, actual ... .. £	—3,370,665	+3,116,814	+7,398,714	+7,144,863
	Relative magnitude of variation. Total				
	variation taken as 100 ... ..	—47.18	+43.62	+103.56	+100
1906.	Variation, actual ... .. £	+2,547,283	+6,946,914	+10,547,394	+20,041,591
	Relative magnitude of variation. Total				
	variation taken as 100 ... ..	+12.71	+34.66	+52.63	+100
1907.	Variation, actual ... .. £	—3,776,513	+12,208,745	+14,695,843	+23,128,075
	Relative magnitude of variation. Total				
	variation taken as 100 ... ..	—16.32	+52.78	+63.54	+100
1908.	Variation, actual ... .. £	—739,245	+7,724,413	+7,629,718	+14,614,886
	Relative magnitude of variation. Total				
	variation taken as 100 ... ..	—5.06	+52.85	+52.21	+100
1909.	Variation, actual ... .. £	—5,957,400	+11,624,804	+9,955,260	+15,622,664
	Relative magnitude of variation. Total				
	variation taken as 100 ... ..	—38.13	+74.40	+63.73	+100
1910.	Variation, actual ... .. £	—10,169,679	+21,222,912	+13,741,745	+24,794,978
	Relative magnitude of variation. Total				
	variation taken as 100 ... ..	—41.01	+85.59	+55.42	+100
	Variation, per cent. ... ..	—70.88	+60.04	+24.32	+49.90

From the above figures it will be seen that the exports of 1910, for example, of specie and gold bullion compared with 1901, shew a decrease of 70.88 per cent., other exports (merchandise) shew an increase of 60.04 per cent. in quantities, and an increase of 24.32 per cent. in the group-prices. These several influences effect an aggregate increase of £24,794,978, or 49.90 per cent., over 1901 as follows:—By increased quantities of merchandise, £21,222,912 (85.59 per cent.); by increased prices, £13,741,745 (55.42 per cent.); accompanied by a decrease of £10,169,679 (41.01 per cent.) in the exports of specie and gold.

## 10. External Trade of Australia and other Countries.

1. **Essentials of Comparisons.**—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the scheme of record, are sensibly identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may be added thereto. Or again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices, fixed from time to time by a commission constituted for the purpose. The figures relating to the

external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represents approximately 40 per cent. of the gross trade recorded; of Switzerland, 45 per cent.; of France, 20 per cent.; and of the United Kingdom, 15 per cent.; whereas in Australia the same element represents only 4 per cent., and in New Zealand even less.

2. "Special Trade" of Various Countries.—Special trade may be defined, agreeably to the practice of the British Board of Trade, as (a) imports entered for consumption in the country (as distinguished from imports for transshipment or re-export), and (b) exports of domestic products.

In the following table the figures relate, as nearly as is possible, to imports entered for consumption in the various countries quoted, and to exports of their domestic products. It is to be noted, however, that these figures do not unequivocally denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production, and further, the statistical records of many countries do not distinguish between bullion and specie imported for the use of the particular country (home consumption) and the amount in transit, nor between the exports of that produced within the country and that re-exported. Nevertheless a comparison of this character reveals approximately the extent of the external trade which otherwise would not be manifest.

From the following table it may be seen that, for the particular years indicated, the value of the total trade per inhabitant was greatest in New Zealand (£39 Os. 9d. per head); the next country in order of value per inhabitant was Belgium (£35 17s. 5d. per head), followed by Switzerland (£32 10s. 2d. per head). Australia comes fourth (£29 11s. 4d. per head), and is some way in advance of the next country, viz., the Argentine Republic (£26 11s. 3d. per head):—

**TRADE OF VARIOUS COUNTRIES (IMPORTS FOR HOME CONSUMPTION AND EXPORTS OF DOMESTIC PRODUCTS, INCLUDING BULLION AND SPECIE), FOR LATEST AVAILABLE YEAR.**

Country.	Year ended.	Trade.			Trade per Inhabitant.		
		Imports	Exports.	Total.	Im-ports.	Ex-ports.	Total.
		£	£	£	£ s. d.	£ s. d.	£ s. d.
COMMONWEALTH OF AUSTRALIA	31/12/10	57,359,396	71,836,195	129,195,591	13 2 7	16 8 9	29 11 4
United Kingdom	...	581,193,843	430,384,772	1,011,578,615	12 12 8	9 7 1	21 19 9
Canada	31/3/11	96,328,750	57,149,282	153,378,032	12 10 1	7 8 7	19 18 8
New Zealand	31/12/10	16,815,537	21,944,163	38,759,700	16 18 9	22 2 0	39 0 9
United States of America	30/6/10	334,253,753	391,197,560	725,451,313	3 13 10	4 6 5	8 0 3
Argentine Republic	31/12/09	74,042,000	79,720,000	153,762,000	12 15 10	13 15 5	26 11 3
Austria-Hungary	...	124,309,000	101,966,000	226,275,000	2 10 6	2 1 5	4 11 11
Belgium	...	151,828,000	114,354,000	266,182,000	20 9 11	15 8 3	35 17 5
Denmark	...	31,699,000	24,879,000	56,578,000	11 15 6	9 4 11	21 0 5
France	...	271,459,000	243,163,000	514,622,000	6 18 3	6 3 10	13 2 1
German Empire	...	435,636,000	337,220,000	772,856,000	6 16 5	5 5 7	12 2 0
Italy	...	125,188,000	76,839,000	202,027,000	3 13 0	2 4 10	5 17 10
Japan	...	49,532,000	43,731,000	93,263,000	2 0 0	0 17 8	2 17 8
Norway	...	19,941,000	13,069,000	33,010,000	8 11 5	10 9 9	13 19 8
Portugal	...	14,995,000	7,175,000	22,170,000	2 16 4	1 7 0	4 3 4
Spain	...	38,255,000	37,650,000	75,905,000	1 18 4	1 17 9	3 16 1
Sweden	31/12/08	33,830,000	26,779,000	60,609,000	6 5 2	4 19 1	11 4 3
Switzerland	31/12/09	69,120,000	47,417,000	116,537,000	19 5 7	13 4 7	32 10 2
Uruguay	31/12/08	7,539,000	8,395,000	15,934,000	7 4 9	8 1 1	15 5 10

3. External Trade as a Measure of Prosperity.—External trade is not necessarily a measure of the prosperity of a country. Comparisons can be accepted as furnishing satisfactory indications of the relative progress or welfare of different countries, only

when taken together with all other facts that should be considered in this connection. It is, for example, obvious that the external trade of a community depends not only upon the aggregate of its requirements, but also upon the extent to which it fails to supply requirements from its own resources. A community largely self-contained, for example, may have but a small external trade per head, and yet, by virtue of its capacity to produce and manufacture its own raw material, may actually enjoy greater prosperity and a higher standard of living than another country whose external trade per head is much greater. The same observation applies equally to comparisons of the trade of the same country at different periods. A young country, the industries and export trade of which are mainly connected with raw or natural products, may, for example, through internal development, find the growth of its external trade diminishing per head of population without necessarily suffering any real diminution in the well-being of its people. And it is further obvious that circumstances may arise when enlargement of both imports and exports is actually a consequence of temporary economic difficulties. For example, in 1908, owing to shortage in the local supply, it became necessary to import wheat and flour into Australia to the value of £2,556,968, and to meet the charges for this by equivalent exports, the effect, considered *per se*, being to enlarge both. In this case the increase is not an evidence of prosperity.

4. **Australian Trade Evidence of Prosperity.**—Despite the above suggestions regarding the necessity of caution so as to avoid hasty inferences based upon aggregate trade, a consideration of its general characteristics over a number of years, and of its marked development, will suffice to shew that Australian affairs are progressing rapidly and most favourably, especially when it is taken into account that there are no counter-balancing elements of disadvantage.

## § II. Trade of the United Kingdom with Australia.

1. **General.**—The failure of the United Kingdom to maintain the position formerly held by her in the import trade of Australia has, during recent years, become a matter of more than ordinary interest in both countries. In June, 1905, Mr. R. J. Jeffray was sent here as a "Commissioner of the Advisory Committee on Commercial Intelligence of the British Board of Trade," to investigate the conditions and prospects of British trade with this country, and early in 1908 Mr. Ben H. Morgan was sent on a similar mission by the Manufacturers' Association of Great Britain, and in particular to report on:—(i.) The extent and possibilities of the market, with a view to (a) increasing export trade, (b) establishing branch factories inside the tariffs; (ii.) the extent and condition of local industries; (iii.) the nature and condition of foreign competition; (iv.) transport services, with special reference to shipping "rings" and "conferences"; (v.) the operation of local tariffs and effects of preferences. In December, 1908, Mr. C. Hamilton Wickes reached here as a permanent Commissioner of the British Board of Trade, for the purpose of advising British manufacturers of the particular requirements of the Australian markets, with a view to improving the trade between the Commonwealth and the United Kingdom.

In a previous issue of this work (No. 1, 1907) reference was made to the report of Mr. Jeffray, in which he gave the following principal causes of the success of the foreign manufacturer in the Australian market:—(i.) Greater promptitude and attention to orders; (ii.) greater readiness to adapt their goods to the requirements of customers; (iii.) more efficient representation in Australia; (iv.) better package of goods; (v.) more attractive appearance of goods; (vi.) lower freights.

Mr. Morgan reports "that the most important reason for the growth of foreign trade in Australia is that the foreign manufacturer is able to quote lower prices than the British manufacturer for goods of equal value." That the foreign manufacturer is able to do this, is, he contends, due to the following, viz.:—(i.) *Protection*. By virtue of

protection for his home market "the foreign manufacturer can depend on a definite consumption therein, and is thus able to produce in larger quantities, and therefore more cheaply." (ii). *Lower shipping rates and raw materials.* "Direct shipping services have been established with foreign countries, who carry goods generally at lower rates than British shipping companies carry British goods, and that, following the development of manufacturing industries in foreign countries and the establishment of those cheap shipping facilities, the markets for raw materials are being diverted to those countries . . . and by carrying at lower rates, give their manufacturers an advantage in price in such raw materials." After quoting many instances of goods being charged freights from Liverpool to Australia much above those charged on similar goods from New York to Hamburg *via* Liverpool to Australia, Mr. Morgan says:—"This shipping question is one of vital interest to manufacturers, and the time has come when they must, if they are to retain their position in export markets, interest themselves directly in freight matters, instead of leaving them as heretofore to merchants and shipping agents."

Mr. Wickes, addressing the British delegates attending the seventh Congress of the Chambers of Commerce of the Empire, alluding to freights, said:—"I doubt if there is any question which so illustrates the want of organisation among our commercial community," and he suggested that there should be a keener study of freight rates from other parts of the world, and also a closer co-operation of British manufacturers, for the more economical distribution of their manufactures. In subsequent reports, Mr. Wickes strenuously advocates more direct representation of British manufacturers in Australia.

**2. Proportion of Trade from United Kingdom.**—The percentages given in the following table shew the proportions of the imports into Australia from the United Kingdom, and from other countries mentioned, during each of the years 1886 to 1910:—

**PROPORTION OF COMMONWEALTH IMPORT TRADE FROM VARIOUS COUNTRIES,  
1886 to 1910.**

Year.	Percentage Proportions from—					Year.	Percentage Proportions from—				
	United K'dom.	British Poss'ns.	Ger'm'y.	United States.	Total Foreign C'tries.		United K'dom.	British Poss'ns.	Ger'm'y.	United States.	Total Foreign C'tries.
1886	73.37	11.23	2.05	6.11	15.40	1899	61.85	11.75	6.07	13.00	26.40
1887	72.26	12.59	2.28	5.37	15.24	1900	61.28	11.28	6.54	12.16	27.44
1888	71.62	12.03	2.71	6.48	16.35	1901	59.47	11.22	6.59	13.80	29.31
1889	68.98	13.45	3.65	6.67	17.57	1902	58.64	13.22	6.53	12.27	28.14
1890	68.08	12.66	4.77	6.54	19.26	1903	52.51	13.17	6.24	16.84	34.32
1891	70.15	11.40	4.53	6.79	18.45	1904	60.68	12.22	7.17	12.40	27.10
1892	70.74	11.37	4.32	6.04	17.89	1905	60.17	14.04	6.42	11.70	25.79
1893	72.78	12.14	3.40	4.98	15.08	1906	59.39	15.09	7.16	10.36	25.52
1894	71.92	11.98	3.78	5.39	16.12	1907	61.59	12.93	6.85	11.33	25.48
1895	71.62	11.46	4.42	5.95	16.92	1908	60.10	12.83	7.05	12.13	27.07
1896	68.28	10.74	5.31	8.59	20.98	1909	60.92	13.45	6.51	9.78	25.63
1897	66.22	10.72	5.75	10.10	23.06	1910	61.06	13.11	6.30	10.82	25.83
1898	66.62	10.88	5.86	10.16	22.50						

In order to draw accurate conclusions from the above table, however, special attention must be given to the nature of imports from the United States, since the imports from that country have in some years been increased by imports of breadstuffs, a trade in which the United Kingdom could not participate. The years affected by the imports of breadstuffs were 1886, 1889, 1896, 1897, and 1903. Increased imports of such items as kerosene oil and timber also tend to increase the proportion of imports from the United States without any prejudicial effect on the trade of the United Kingdom. Similar modification is not necessary in regard to Germany, as the nature of the imports from that country is substantially the same as from the United Kingdom.

It has already been pointed out in this chapter that, prior to the year 1905, imports into the Commonwealth were recorded only against the country whence they were directly imported. Although the values of direct imports do not afford satisfactory data, it is

necessary for any comparison extending further back than 1905 to use such figures. These figures are unsatisfactory on account of the varying proportions of indirect trade.

In order to furnish a comparison free from the influence of such trade as, from its nature, is not open to the United Kingdom, the following table, shewing the direct imports during the years 1886, 1906 and 1910 of the principal classes of goods which enter largely into the trade of the countries named, has been prepared. It may be mentioned that the imports for the year 1886 were extracted from the "Statistical Registers" of the several States for a comparison—published in a previous issue—with the year 1906, and as their compilation involved a large amount of labour they are again utilised for comparison with the year 1910.

**PRINCIPAL DIRECT IMPORTS INTO THE COMMONWEALTH FROM THE UNITED KINGDOM, GERMANY, AND THE UNITED STATES, 1886, 1906 and 1910.**

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries.
		£	£	£	£
Foodstuffs of animal origin ...	1886	348,950	5,603	70,959	674,296
	1906	293,950	24,319	146,781	697,830
	1910	360,772	37,737	210,707	873,697
Alcoholic liquors ...	1886	1,801,200	82,185	82,730	2,126,877
	1906	1,053,154	109,426	24,367	1,388,671
	1910	1,297,598	149,661	12,357	1,654,237
Apparel, textiles, etc. (incl. boots)	1886	9,845,182	54,350	15,336	10,316,989
	1906	11,066,201	418,776	221,362	13,508,844
	1910	14,193,599	444,592	267,028	17,438,605
Metals unmanufactured and partly manufactured* ...	1886	403,809	2,241	...	430,950
	1906	696,331	62,945	34,927	927,785
	1910	827,854	101,274	44,217	1,296,309
Manufactures of metals (including machinery) ...	1886	4,616,924	94,832	311,342	5,190,901
	1906	5,144,912	926,314	1,379,662	7,932,675
	1910	7,991,225	1,154,638	2,276,057	12,074,821
Paper and stationery ...	1886	1,260,531	21,038	39,700	1,340,627
	1906	1,207,729	261,684	288,509	1,838,474
	1910	1,659,385	258,241	223,431	2,457,216
Jewellery, timepieces, fancy goods	1886	659,833	24,206	57,477	789,127
	1906	740,850	140,950	59,151	1,045,164
	1910	916,609	205,919	90,825	1,428,029
Earthenware, cements, etc. ...	1886	755,907	78,762	24,711	938,476
	1906	316,252	227,390	37,344	688,510
	1910	530,554	253,028	52,208	1,015,313
Drugs, chemicals, fertilisers, etc.	1886	511,216	8,660	33,382	766,243
	1906	887,325	193,615	82,789	1,732,543
	1910	939,580	152,401	90,773	2,186,005
Leather, and mfs. thereof and substitutes therefor, including indiarubber ...	1886	285,601	6,357	53,588	363,332
	1906	682,238	70,028	116,356	924,968
	1910	923,851	125,725	99,211	1,303,134
Total above-mentioned imports ...	1886	20,489,153	378,234	689,225	22,937,818
	1906	22,088,942	2,435,447	2,391,248	30,685,464
	1908	24,558,163	2,638,279	3,044,691	34,444,436
	1909	25,650,092	2,507,669	2,511,450	35,275,485
	1910	29,641,027	2,983,216	3,366,814	41,727,366
Total imports (less bullion and specie) ...	1886	24,974,939	699,075	2,087,213	33,885,284
	1906	26,437,768	3,202,990	4,633,331	42,413,995
	1908	29,703,021	3,508,845	6,039,499	48,608,921
	1909	31,129,940	3,329,641	5,002,923	50,115,521
	1910	36,273,169	3,777,669	6,494,588	58,682,391

\* Mainly pig iron and bar and rod iron.

**PERCENTAGE ON TOTAL COMMONWEALTH IMPORTS OF PRINCIPAL DIRECT  
IMPORTS FROM UNITED KINGDOM, GERMANY, AND UNITED STATES, 1886,  
1906 and 1910.**

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries
Foodstuffs of animal origin ...	{ 1886	51.75	0.83	10.52	100
	{ 1906	42.12	3.48	21.02	100
	{ 1910	41.29	4.32	24.12	100
Alcoholic liquors ...	{ 1886	84.69	3.86	3.89	100
	{ 1906	75.84	7.88	1.75	100
	{ 1910	78.44	9.05	0.75	100
Apparel, textiles, etc. (including boots)	{ 1886	95.44	0.53	0.15	100
	{ 1906	81.93	3.10	1.64	100
	{ 1910	81.39	2.55	1.53	100
Metals unmanufactured and partly manufactured ...	{ 1886	93.72	0.52	—	100
	{ 1906	75.06	6.78	3.76	100
	{ 1910	63.86	7.81	3.41	100
Manufactures of metals ...	{ 1886	88.93	1.83	6.00	100
	{ 1906	64.85	11.68	17.39	100
	{ 1910	66.18	9.56	18.85	100
Paper and stationery ...	{ 1886	94.03	1.57	2.96	100
	{ 1906	65.69	14.23	15.69	100
	{ 1910	67.52	10.51	9.09	100
Jewellery, timepieces, and fancy goods	{ 1886	83.62	3.07	7.28	100
	{ 1906	70.89	13.48	5.66	100
	{ 1910	64.19	14.42	6.36	100
Earthenware, cements, etc. ...	{ 1886	80.55	8.39	2.63	100
	{ 1906	45.93	33.03	5.42	100
	{ 1910	52.26	24.92	5.14	100
Drugs, chemicals, fertilisers, etc. ...	{ 1886	66.71	1.13	4.86	100
	{ 1906	51.22	11.18	4.78	100
	{ 1910	42.98	6.97	4.15	100
Leather and mfs. thereof, and substitutes therefor, including indiarubber	{ 1886	78.60	1.75	15.30	100
	{ 1906	73.75	7.60	12.58	100
	{ 1910	70.90	9.65	7.61	100
Total above-mentioned imports ...	{ 1886	89.31	1.65	3.01	100
	{ 1906	71.98	7.94	7.79	100
	{ 1908	71.29	7.66	8.84	100
	{ 1909	72.70	7.10	7.12	100
	{ 1910	71.04	6.91	8.07	100
Total imports (less bullion and specie)	{ 1886	73.71	2.06	6.16	100
	{ 1906	62.34	7.55	10.92	100
	{ 1908	61.11	7.32	12.42	100
	{ 1909	62.10	6.64	9.98	100
	{ 1910	61.82	6.44	11.07	100

The foregoing table shews that the share of the United Kingdom, as indicated by the records according to "Country of Shipment," in the trade of those classes of goods enumerated—representing over 80 per cent. of the total imports from that country—has declined from 89.31 per cent. of the whole in 1886 to 71.04 per cent. in 1910. The value of these imports from the United Kingdom has increased from £20,489,153 in 1886 to only £29,641,027 in 1910, or by 44.67 per cent., while the total value of similar imports has increased from £22,937,818 to £41,727,366, or by 81.92 per cent. Had the United Kingdom maintained her position as in 1886 the value of her share of this trade should have been £37,270,000 in 1910 instead of £29,641,027.

The following table gives an analysis of the imports during the years 1906-1910 according to the countries of origin of the goods, and has been extended to include the products of Belgium and France. It is probable that in 1905\* (the first year in which countries of origin were recorded), and in a lesser degree in 1906, some goods were credited to the United Kingdom which were really manufactured elsewhere. This matter is more particularly referred to in a subsequent section dealing with the effect of preference.

**IMPORTS INTO THE COMMONWEALTH OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, BELGIUM, FRANCE, GERMANY, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1906 to 1910.**

Nature of Imports.	Year.	United Kingdom.	Belgium	France.	Germany.	U.S. of America.	All Countries
		£	£	£	£	£	£
Foodstuffs of animal origin	1906	175,077	122	17,350	9,224	166,643	697,830
	1907	177,767	800	4,637	7,859	153,599	688,642
	1908	327,047	348	5,103	9,983	227,308	834,542
	1909	309,642	4,505	5,431	6,737	181,435	751,044
	1910	313,066	1,141	3,806	6,414	242,427	873,697
Alcoholic liquors, etc.	1906	889,157	146	248,364	67,774	25,187	1,388,671
	1907	1,015,026	3,175	271,295	71,921	26,043	1,556,224
	1908	1,007,600	914	281,529	77,379	18,182	1,575,151
	1909	956,882	1,637	250,042	80,283	13,053	1,496,956
	1910	1,052,003	1,502	287,106	95,039	17,330	1,654,237
Apparel (including boots), textiles, etc.	1906	9,306,334	69,381	745,202	933,867	373,599	13,508,844
	1907	9,900,952	138,685	889,545	1,344,415	444,594	15,367,604
	1908	8,791,471	131,317	786,394	1,252,337	349,885	13,844,687
	1909	9,231,968	155,078	857,808	1,299,041	355,768	14,765,738
	1910	10,896,368	204,370	864,908	1,446,075	429,517	17,438,605
Metals unmanufactured or partly manufactured, excluding gold and silver bullion	1906	687,195	37,533	4,975	108,577	36,138	927,785
	1907	823,259	57,818	2,124	112,818	46,258	1,133,231
	1908	665,128	62,685	3,995	130,627	61,026	976,307
	1909	667,327	73,495	2,447	116,017	50,015	971,616
	1910	821,626	125,752	2,882	198,946	44,993	1,296,309
Manufactures of metals	1906	4,870,096	174,542	22,856	1,040,682	1,583,483	7,932,675
	1907	6,767,768	129,686	29,779	1,184,232	2,022,584	10,531,166
	1908	6,550,743	148,692	44,185	1,142,443	1,938,008	10,171,607
	1909	6,786,806	137,710	47,947	1,190,998	1,732,858	10,372,019
	1910	7,491,624	159,095	48,528	1,369,378	2,460,278	12,074,821
Paper and stationery	1906	1,101,636	8,199	9,073	282,175	326,561	1,838,474
	1907	1,199,123	22,273	10,351	317,544	326,779	2,071,344
	1908	1,217,008	31,923	13,656	310,006	292,426	2,234,930
	1909	1,250,166	23,800	14,889	236,970	231,215	2,098,638
	1910	1,448,938	31,726	17,974	248,102	275,181	2,457,216
Jewellery, timepieces and fancy goods	1906	525,184	12,365	66,945	193,108	82,852	1,045,164
	1907	516,552	48,170	109,515	239,363	131,750	1,261,046
	1908	418,400	49,428	127,831	210,814	87,201	1,102,644
	1909	482,473	38,396	107,915	227,625	97,125	1,203,528
	1910	526,605	49,971	117,831	261,226	140,611	1,428,029
Earthenware, cements, glass, etc.	1906	303,478	71,626	19,727	227,922	41,860	688,510
	1907	399,074	119,915	28,357	206,705	68,036	863,849
	1908	411,913	103,776	26,918	215,293	40,923	855,855
	1909	378,049	119,633	27,312	176,082	41,866	791,705
	1910	492,842	135,138	31,213	234,074	61,123	1,015,313
Drugs, chemicals, fertilisers	1906	832,309	11,542	165,272	210,864	122,754	1,732,543
	1907	838,227	16,853	181,258	200,269	146,825	1,840,933
	1908	819,949	12,034	224,398	161,594	132,406	1,916,680
	1909	735,854	9,847	173,753	168,590	132,596	1,744,023
	1910	939,349	18,767	177,839	185,794	140,957	2,186,005
Leather and manufactures thereof and substitutes therefor, including india-rubber (excluding boots)	1906	352,425	229	38,629	108,992	256,902	924,968
	1907	414,302	1,406	40,490	117,833	275,235	1,004,822
	1908	367,839	202	49,534	145,461	227,260	932,033
	1909	383,930	551	54,079	210,307	294,128	1,080,222
	1910	490,154	1,573	64,407	189,660	306,363	1,303,134
Total above-mentioned imports	1906	19,072,891	385,685	1,338,393	3,183,185	3,020,979	30,685,464
	1907	22,052,050	538,781	1,567,351	3,802,959	3,641,703	36,318,861
	1908	20,577,098	541,319	1,563,543	3,655,937	3,374,630	34,444,436
	1909	21,183,097	564,652	1,541,623	3,712,650	3,130,059	35,275,485
	1910	24,472,575	730,035	1,616,394	4,234,708	4,118,780	41,727,366
Total imports (less bullion and specie)	1906	22,755,482	446,251	1,473,360	3,927,262	5,603,215	42,413,095
	1907	26,441,942	632,486	1,742,612	4,622,953	6,763,531	49,974,833
	1908	25,042,810	636,450	1,775,389	4,482,119	6,574,380	48,608,921
	1909	25,809,347	662,132	1,784,312	4,537,112	5,934,295	50,115,521
	1910	30,048,714	853,708	1,919,735	5,214,149	7,658,878	58,682,391

\* For 1905 figures see Official Year Book No. 3.

† Mainly pig iron and bar and rod iron.



In the above table the totals only, of the several classes of goods mentioned, have been dealt with. On pages 642 *et seq.* will be found a more detailed analysis, shewing the principal items of United Kingdom origin, in which goods favoured by preferential tariff rates are distinguished from other imports.

**COMMONWEALTH PERCENTAGE ON TOTAL IMPORTS, OF IMPORTS OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, BELGIUM, FRANCE, GERMANY, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1906 to 1910.**

Nature of Imports.	Year.	United Kingdom.	Belgium.	France.	Germany.	U.S.A.	All Countries
Foodstuffs of animal origin	1906	25.08	0.02	2.49	1.32	23.61	100
	1907	25.81	0.12	0.67	1.14	22.30	100
	1908	39.19	0.04	0.61	1.20	27.25	100
	1909	41.23	0.60	0.72	0.90	24.16	100
	1910	35.83	0.14	0.44	0.73	27.75	100
Alcoholic liquors, etc. ....	1906	64.06	0.01	17.89	4.88	1.81	100
	1907	65.21	0.20	17.43	4.62	1.67	100
	1908	63.96	0.05	17.82	4.91	1.15	100
	1909	63.92	0.11	16.71	5.36	0.87	100
	1910	63.59	0.09	17.36	5.75	1.05	100
Apparel (including boots), textiles, etc. ....	1906	68.91	0.51	5.51	6.91	2.77	100
	1907	64.44	0.90	5.79	8.75	2.89	100
	1908	63.56	0.95	5.68	9.04	2.53	100
	1909	62.53	1.05	5.81	8.80	2.41	100
	1910	62.48	1.17	4.96	8.29	2.46	100
Metals unmanufactured or partly manufactured, excluding gold and silver bullion ...	1906	74.08	4.05	0.54	11.70	3.90	100
	1907	72.66	5.10	0.19	9.96	4.08	100
	1908	68.20	6.42	0.41	13.38	6.25	100
	1909	68.68	7.56	0.25	11.94	5.15	100
	1910	63.38	9.70	0.22	15.35	3.47	100
Manufactures of metals ...	1906	61.39	2.20	0.29	13.12	20.02	100
	1907	64.27	0.64	0.28	11.25	19.21	100
	1908	64.40	1.46	0.43	11.23	19.05	100
	1909	65.43	1.38	0.46	11.48	16.71	100
	1910	62.04	1.32	0.40	11.34	20.37	100
Paper and stationery ...	1906	59.92	0.45	0.49	15.35	17.76	100
	1907	57.89	1.07	0.50	15.33	15.77	100
	1908	54.45	1.43	0.61	13.87	13.08	100
	1909	59.97	1.13	0.71	11.29	11.02	100
	1910	58.96	1.29	0.73	10.10	11.20	100
Jewellery, timepieces, and fancy goods ...	1906	50.25	1.18	6.40	19.31	7.93	100
	1907	40.97	3.82	8.68	18.98	10.42	100
	1908	37.95	4.48	11.59	19.12	7.91	100
	1909	40.09	3.19	8.97	18.92	8.07	100
	1910	36.88	3.50	8.25	18.29	9.85	100
Earthenware, cements, glass, etc. ....	1906	44.07	10.40	2.86	33.10	6.08	100
	1907	46.19	13.88	3.28	23.93	7.87	100
	1908	48.09	12.13	3.15	25.16	4.78	100
	1909	47.75	15.11	3.45	22.24	5.29	100
	1910	48.54	13.41	3.07	23.05	6.02	100
Drugs, chemicals, and fertilisers ...	1906	48.04	0.66	9.54	12.17	7.10	100
	1907	45.54	0.91	9.85	10.88	7.98	100
	1908	42.78	0.62	11.71	8.43	6.91	100
	1909	42.20	0.56	9.96	9.67	7.60	100
	1910	42.97	0.86	8.14	8.50	6.45	100
Leather and manufactures thereof and substitutes therefor, including india-rubber (excluding boots)	1906	41.35	0.02	4.17	11.78	27.78	100
	1907	41.24	0.14	4.03	11.73	27.40	100
	1908	39.47	0.02	5.31	15.61	24.39	100
	1909	35.55	0.05	5.01	19.47	27.23	100
	1910	37.61	0.12	4.94	14.56	23.51	100
Total above-mentioned articles ...	1906	62.16	1.26	4.36	10.37	9.84	100
	1907	60.72	1.48	4.32	10.47	10.03	100
	1908	59.74	1.57	4.54	10.61	9.80	100
	1909	60.05	1.60	4.37	10.52	8.87	100
	1910	58.65	1.75	3.87	10.15	9.87	100
Total imports...	1906	53.65	1.05	3.47	9.26	13.21	100
	1907	52.91	1.27	3.49	9.25	13.53	100
	1908	51.52	1.31	3.65	9.22	13.54	100
	1909	51.50	1.32	3.56	9.05	11.84	100
	1910	51.21	1.45	3.32	8.89	13.05	100

A comparison of the results given in the immediately preceding tables with those given on pages 632 and 633 discloses the value of the export trade of other countries which reaches the Commonwealth through the United Kingdom.

3. **Significance of Increase of Trade with other Countries.**—It has been suggested that the larger proportion of imports now received from foreign countries is due to the establishment and increase of direct shipping with the countries concerned, and that trade formerly received through English ports is now received direct. From the Australian records it is impossible to ascertain the value of the indirect trade with foreign countries through the United Kingdom prior to 1905. The returns of the British Board of Trade, however, shew the exports from the United Kingdom to Australia of foreign and colonial products distinct from the domestic exports, and from this source the table hereunder has been compiled.

It is proper here to mention that, taken in quinquennial periods, the values of the total exports from the United Kingdom to Australia—after making allowance for freight and charges—are in very close agreement with the corresponding import values recorded in this country.

**AVERAGE ANNUAL VALUE OF MERCHANDISE AND BULLION AND SPECIE  
DESPATCHED FROM THE UNITED KINGDOM TO AUSTRALIA, 1886 to 1910.**

Years.	Merchandise.			Bullion and Specie.	Total.	Percentage Proportion of Foreign and Colonial Produce.
	United Kingdom Produce.	Foreign and Colonial Produce.				
		Re-exported.	Transhipped under Bond.			
	£	£	£	£	£	
1886-1890 ...	19,510,884	2,344,309	874,249	90,135	22,819,577	14.16
1891-1895 ...	15,376,625	1,756,065	556,287	402,256	18,091,233	13.07
1896-1900 ...	18,353,571	1,919,912	445,552	117,146	20,836,181	11.42
1901-1905 ...	18,271,705	2,226,321	750,520	79,014	21,327,560	14.01
1906-1910 ...	27,652,367	3,420,256	1,168,427	353,028	32,594,078	14.08

From the above table it will be seen that the average proportion of foreign goods despatched to Australia through the United Kingdom during the last five years is almost identical with the average of the years 1886-90, and is greater than the average of the past twenty-five years, viz., 13.35 per cent. During the quinquennium 1886-90 the average value of foreign and colonial produce despatched each year from the United Kingdom to Australia was £3,218,558, equal to 14.16 per cent. of all goods so despatched, while during the period 1906-10 the corresponding amount was £4,588,683, or 14.08 per cent. It is therefore apparent that the increase of direct imports from foreign countries has not been, in the aggregate, at the expense of the indirect trade via Great Britain.

4. **Preferential Tariff.**—The Tariff Act of 1908, at present in force, provides preferential tariff rates in favour of goods produced or manufactured in the United Kingdom. On the introduction of the preferential treatment of British goods, it was required that British material or labour should represent not less than one-fourth the value of such goods. From the 1st September, 1911, it is required, in regard to goods only partially manufactured in the United Kingdom, that the final process or processes of manufacture shall have been performed in the United Kingdom, and that the expenditure in material of British production and/or British labour shall have been not less than one-fourth of the factory or works' cost of the goods in the finished state.

In the analyses given in this section the results shewn are those obtained by applying the tariff rates to the imports of the year, whether entered for consumption or re-exported. The re-exports are, however, relatively small.

The following table presents an analysis of the imports during 1910, distinguishing those affected—favourably or adversely—by the preferential provisions of the tariff, from those not affected:—

## COMMONWEALTH IMPORTS, 1910, PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	Country of Origin.			
	United Kingdom.	British Possessions.	Foreign Countries.	Total.
Imports affected by preferential tariff	£	£	£	£
Free ... ..	6,425,260	—	—	6,425,260
Dutiable ... ..	12,624,246	211,687	9,655,762	22,491,695
Total ... ..	19,049,506	211,687	9,655,762	28,916,955
Impts. not affected by preferential tariff				
Free ... ..	7,647,344	4,800,996	6,861,006	19,309,346
Dutiable ... ..	3,351,864	1,605,994	5,498,232	10,456,090
Total ... ..	10,999,208	6,406,990	12,359,238	29,765,436
Total merchandise ... ..	30,048,714	6,618,677	22,015,000	58,682,391
Bullion and specie ... ..	371,826	951,813	8,321	1,331,960
Total imports ... ..	30,420,540	7,570,490	22,023,321	60,014,351

Of the total imports of merchandise (£58,682,391) £28,916,955, or 49.28 per cent., would be affected by the preferential tariff.

The imports during 1910 of United Kingdom origin, favoured by preference, amounted to £19,049,506, representing 63.40 per cent. of the total imports of merchandise from that country, against £16,482,032 (63.86 per cent.) during 1909. Under the preferential tariff these imports would be subject to duty equivalent to an average *ad valorem* rate of 13.05 per cent., as compared with an average rate of 18.15 per cent. which the same goods would be required to pay under the general tariff rates—an advantage of £972,174 in the amount of duty. The actual amount of rebate allowed on United Kingdom goods entered for home consumption during 1910, under the varying rates of duty, was £970,164.

The following tables give the comparative results of an application of the preferential tariff rates and the general tariff rates to the imports from the United Kingdom, British Possessions and foreign countries respectively:—

## IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES.

## FROM UNITED KINGDOM.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
(A) Free ... ..	£ 6,425,260	£ ...	Rate % ...	£ 333,406	Rate % 5.18
(B) Dutiable ... ..	12,624,246	2,485,497	19.69	3,124,265	24.75
Total ... ..	19,049,506	2,485,497	13.05	3,457,671	18.15

## IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES.

## FROM BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under--			
		General Tariff.		Preferential Tariff.	
Imports similar to group A above	£ 73,264	£ 3,670	Rate % 5.01	£ ...	Rate % ...
" " " B "	138,423	39,134	38.27	32,057	23.11
Total - ...	211,687	42,804	20.22	32,057	15.15

## FROM FOREIGN COUNTRIES.

Imports similar to group A above	£	£	Rate %	£	Rate %
	1,454,867	72,833	5.01	...	...
" " " B "	8,200,895	1,963,846	23.95	1,514,610	18.47
Total - ...	9,655,762	2,036,679	21.09	1,514,610	15.69

The proportion of the imports from British Possessions adversely affected by the preference to the United Kingdom is relatively small, representing only 3.20 per cent. of the imports of merchandise from those countries. The surcharge of duty on imports from British Possessions during 1910 amounted to £10,747, as against £15,882 in 1909. The larger amount of surcharge in 1909 was mainly due to imports of steel rails from Canada in that year. The sum of £10,747 would, on the basis of the trade of 1910, represent the loss of revenue involved in an extension of the preference given to the United Kingdom to the rest of the Empire, as in the preferential scheme of New Zealand. The British Possessions chiefly affected are India, Canada, Straits Settlements, and New Zealand.

The surcharge on imports, affected by preference, from foreign countries during 1910 would amount to £522,069, as against £431,143 during 1909.

**5. Effect of Preference.**—It may again be mentioned here that the system of recording imports according to "country of origin," was introduced only from the beginning of 1905, and it is evident that in the earlier period of its operation, some goods, imported through the United Kingdom, were wrongly described as of United Kingdom origin. Particular instances in which manufactures of foreign countries have obviously been credited to the United Kingdom are alluded to later. When the question of revenue became involved, and a more exact description of the goods was insisted upon, goods which might formerly have been accepted and recorded as British would be correctly classed as foreign.

A comparison of the returns of the British Board of Trade (showing the exports of produce or manufacture of the United Kingdom to Australia) with the import returns of the Commonwealth, supports the belief that the proportion of the trade credited to the United Kingdom in this country during the years 1905 and 1906 is too high. If this supposition be correct, the apparent decline in the proportion of British goods, indicated by the Commonwealth records, is somewhat misleading.

The following table shews in regard to imports of United Kingdom origin, that, while the results for the later years are in substantial agreement, those ascertained from the Commonwealth import returns for 1905 are 8.35 per cent. above those ascertained from the returns of the British Board of Trade.

**COMMONWEALTH IMPORT RETURNS AND BRITISH BOARD OF TRADE EXPORT  
RETURNS OF UNITED KINGDOM PRODUCE COMPARED, 1905 to 1910.**

Year.	Exports. Board of Trade Returns.	Add 10 per cent. Freight, etc.	Value for Comparison.	Commonwealth Import Returns.
	£1,000	£1,000	£1,000	£1,000
1905 ...	16,991	1,699	18,690	20,251
1906 ...	20,229	2,023	22,252	22,755
1907 ...	24,097	2,410	26,507	26,442
1908 ...	22,942	2,294	25,236	25,043
1909 ...	23,999	2,400	26,399	25,809
1910 ...	27,652	2,765	30,417	30,049

If it be conceded that the figures of the British Board of Trade for 1905 and 1906 with 10 per cent. added are nearer the truth than the Commonwealth records for those years, and in the subsequent years the Commonwealth figures be accepted, the results would be approximately as follows:—

**IMPORTS OF UNITED KINGDOM ORIGIN, 1905 to 1910.**

Year.	Preferential Imports.		Non-Preferential Imports.*		Total.*	
	Value.	Per cent. on Total Pref. Imports.	Value.	Per cent. on Total Non- Pref. Imports.	Value.	Per cent. on Total Imports.
	£	%	£	%	£	%
1905†	12,220,000	63.98	6,321,000	48.18	18,541,000	57.55
1906†	14,316,000	66.80	7,774,000	50.02	22,090,000	59.74
1907	17,049,000	66.08	9,224,000	51.12	26,273,000	59.93
1908	15,896,000	65.70	9,007,000	50.70	24,903,000	59.36
1909	16,482,000	66.80	9,137,000	49.94	25,619,000	59.61
1910	19,049,000	65.88	10,821,000	48.37	29,870,000	58.23

\* See note (\*) to table on following page. † The figures for these years are based on export returns of the United Kingdom.

From this table it will be observed that instead of declining since 1905, as indicated by the Commonwealth records, the position of the United Kingdom has been, on the whole, slightly improved, the improvement being more pronounced in the preferential division.

The following comparative tables shew the proportion of imports—preferential and non-preferential, respectively—recorded in the Commonwealth as of United Kingdom origin during the years 1905-1910:—

**PREFERENTIAL IMPORTS, 1905 to 1910.**

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905*	13,268,596	69.56	151,463	0.78	5,656,611	29.66	19,076,670	100
1906*	14,643,287	68.58	165,699	0.78	6,545,603	30.64	21,354,589	100
1907	17,049,196	66.08	210,545	0.82	8,539,885	33.10	25,799,626	100
1908	15,895,721	65.70	162,097	0.67	8,136,004	33.63	24,193,822	100
1909	16,482,032	66.80	319,900	1.29	7,875,832	31.91	24,677,764	100
1910	19,049,506	65.88	211,687	0.73	9,635,762	33.39	28,916,955	100

\* See modified figures in the preceding table.

From the percentages shewn above it would appear that the United Kingdom's proportion of this trade has materially declined since 1905, but, as already mentioned, the accuracy of these figures is open to doubt. It will be more satisfactory, therefore, to confine attention to years subsequent to 1906. From the above table it will be seen that, in regard to that portion of the trade which has been affected by the preferential tariff, there has been, on the whole, no decided change in the relative proportions supplied by the United Kingdom. In fact the variations in the percentages have been so small and so uneven, that of themselves they are quite without significance. For instance, the United Kingdom's share of this trade in 1910 was 65.88 per cent., as against 66.08 per cent. in 1907—a decline of 0.2 per cent.; compared with 1908 there is a rise of 0.18 per cent., while against 1909 there is a fall of 0.92 per cent.

#### COMMONWEALTH NON-PREFERENTIAL IMPORTS\*, 1905 to 1910.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905†	6,843,465	51.98	1,621,168	12.31	4,701,383	35.71	13,166,016	100
1906†	7,952,039	50.81	2,017,296	12.89	5,680,078	36.30	15,649,413	100
1907	9,223,549	51.12	2,277,889	12.64	6,543,733	36.24	18,045,171	100
1908	9,006,821	50.70	2,299,775	12.95	6,456,040	36.35	17,762,636	100
1909	9,137,146	49.94	2,500,859	13.66	6,659,699	36.40	18,297,704	100
1910	10,820,679	48.37	3,526,523	15.76	8,025,977	35.87	22,373,179	100

\* In order to obtain a more satisfactory comparison only goods of a character similar to those affected by preferential rates have been included in this table. Articles such as fruits, grain, cocoa beans, raw coffee, tea, sugar, unmanufactured tobacco, hides, fibres, kerosene, timber, etc., which are not produced in the United Kingdom, have been excluded. The proportion of these goods recorded as of United Kingdom origin during 1910 was only 2.41 per cent.

† See modified figures in the second table on the preceding page.

In regard to the non-preferential imports, the proportion supplied by the United Kingdom has fallen from 51.12 per cent. in 1907 to 48.37 per cent. in 1910, the decline being most marked between 1909 and 1910. The proportion supplied by foreign countries rose slightly from 36.24 per cent. in 1907 to 36.40 per cent. in 1909, but declined to 35.87 per cent. in 1910. The increased imports drawn from British Possessions have, therefore, been the principal cause of the smaller proportion from the United Kingdom. The principal items contributing to the increase of £1,248,634 (54.78 per cent.) in the imports from British Possessions during 1910 as compared with 1907 and the increase of each are as follows:—Precious stones, £77,860; bags and sacks, £494,265; guano and rock phosphates, £205,219; coal, £171,936; agricultural implements and machinery, £98,960; rubber and manufactures £42,814; printing paper, £56,930.

Although the increased imports of these items have had the effect of reducing the ratio of the United Kingdom's trade to the total trade, they have not "cut" into its trade nor been in any way detrimental to it. For instance, for some years past India has had practically a monopoly of the supply of bags and sacks, and the increased demand for these goods from India has not reduced the amount of the trade of the United Kingdom, though it has reduced its proportional share of the total trade. The increased imports of guano and rock phosphates from the Pacific Islands were accompanied by increased imports of manufactured fertilisers from the United Kingdom. The exceptional imports of coal (due to the miners' strike in New South Wales) from India and South Africa were also accompanied by similar imports from the United Kingdom, though, owing to greater distance, the imports from the latter country were smaller. The increase of imports of precious stones, though largely the produce of South Africa, came mainly through the United Kingdom, and the gems doubtless were subjected to some dressing there and otherwise yielded profit to British traders. For some years past British manufacturers have not held a prominent position in the supply of agricultural implements and machinery, so that the increased trade of Canada, during the period under review,

cannot be considered a loss to them. The increased imports of rubber from British Possessions were for the most part crude rubber from the Straits Settlements, and thus did not displace British goods; while the imports of printing paper from Canada were accompanied by an increase of 80 per cent. in similar imports from the United Kingdom.

Although the above-mentioned items cannot be eliminated from the total, for the same reasons as those mentioned in the footnote to the preceding table, it is obvious that their abnormal proportions tend to obscure the general results as indicated by the percentage proportions. If the first four of the items mentioned, viz., precious stones, bags and sacks, guano and rock phosphates, and coal, be deducted from the total it will be found that instead of falling from 49.94 per cent. in 1909 to 48.37 in 1910, a decline equal to 1.57 per cent. of the total, the proportions supplied by the United Kingdom would be respectively 54.60 and 53.99, a decline equal to only 0.61 per cent. On the other hand the share of foreign countries would shew a rise from 39.36 per cent. in 1909 to 39.75 per cent. in 1910, instead of a decline from 36.40 per cent. to 35.87 per cent. The fact that the United Kingdom's share in the non-preferential trade has steadily diminished during the past four years, while in the preferential group the movement has been more fluctuating and shews a smaller decline between the terminal points of comparison (1907 and 1910), has been regarded, by some, as an indication of the beneficial effect of preference. But a really incisive investigation of the trade in various classes of goods, however, discloses such conflicting movements that it is extremely difficult to arrive at any definite conclusion as to the general effect of the preference.

The principal classes of imports affected by preference are "apparel, textiles and manufactured fibres," and "manufactures of metals, including machinery." Together these two classes represent 70 per cent. of all imports affected, the former class representing 47 per cent. and the latter 23 per cent. The following analysis gives the particulars of the imports of these groups, as recorded, for the past six years:—

### COMMONWEALTH IMPORTS OF APPAREL, TEXTILES, AND MANUFACTURED FIBRES.

1905 to 1910.

#### PREFERENTIAL.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905* ...	7,586,841*	76.98*	42,442	0.42	2,228,104	22.60	9,857,387	100
1906* ...	8,240,338*	75.92*	59,402	0.55	2,554,765	23.53	10,854,505	100
1907 ...	8,725,908	70.20	68,764	0.54	3,637,169	29.26	12,431,841	100
1908 ...	7,716,800	68.35	54,667	0.48	3,519,641	31.17	11,291,108	100
1909 ...	8,038,772	69.26	58,599	0.50	3,509,876	30.24	11,607,247	100
1910 ...	9,511,026	70.31	55,662	0.41	3,960,627	29.28	13,527,315	100

#### NON-PREFERENTIAL.

1905* ...	903,653*	42.28*	971,931	45.47	261,815	12.25	2,137,399	100
1906* ...	1,045,608*	39.72*	1,251,056	47.53	335,389	12.75	2,632,053	100
1907 ...	1,153,666	39.66	1,327,829	45.64	427,325	14.70	2,908,820	100
1908 ...	1,074,671	42.08	1,168,473	45.76	310,435	12.16	2,553,579	100
1909 ...	1,193,196	37.77	1,380,056	43.70	585,239	18.53	3,158,491	100
1910 ...	1,385,342	35.42	1,798,895	45.99	727,053	18.59	3,911,290	100

\* The amount credited to the United Kingdom in these years is considered to be in excess of the truth.

The above table shews that the gradual improvement made by the United Kingdom in her relative position during the last three years has given her a proportion of the preferential imports of apparel and textiles in 1910 slightly greater than in 1907, while in the non-preferential group her position is shewn to have materially declined. The sudden decline in the United Kingdom's share of the former group from 75.92 per cent. in 1906 to 70.20 per cent. in 1907, accompanied by a decline of only .06 per cent. during

the same period in the non-preferential group suggests, however, that the differentiation in the rates of duty instantly caused a greater accuracy in the statement of origin of goods in the preferential group, whereas in the non-preferential group, where loss of revenue was not involved, the element of misdescription is being only gradually eliminated, and, consequently, that the decline in the latter is more apparent than real. This appears to be amply supported by the item "Minor Articles for Apparel," on which no duty is payable, for while the total imports under this heading have increased from £211,324 in 1905 to £384,886 in 1910 (82 per cent.), and the imports recorded as shipped from the United Kingdom have increased from £178,657 to £311,307 (74 per cent.), the amount recorded as of United Kingdom origin has only increased from £162,767 to £171,461 (5 per cent.); or, in other words, of the total imports of this item recorded as shipped from the United Kingdom in 1905, 91 per cent. was recorded as of United Kingdom origin; in 1906, 89 per cent.; in 1907, 79 per cent.; in 1908, 70 per cent.; in 1909, 58 per cent.; and in 1910, only 54 per cent. The proper assumption is that in the earlier years the United Kingdom was credited with goods which she did not manufacture, rather than that she has, in so short a time, lost so largely to her rivals.

The detailed tables which are appended shew the relative proportions of the various classes of textile goods supplied by the United Kingdom. In regard to those textile goods affected by preference the figures shew that since 1907 (the first year with which satisfactory comparisons can be made), the share of the United Kingdom has been substantially maintained in nearly all the lines enumerated below, the aggregate result being that in the year 1910 she supplied 70.31 per cent. as against 70.20 per cent. in 1907. During the last three years the position of the United Kingdom in the total of this group has steadily improved.

The value and proportion of the more important items, included in the above groups of apparel and textiles, recorded as of United Kingdom manufacture, are given below:—

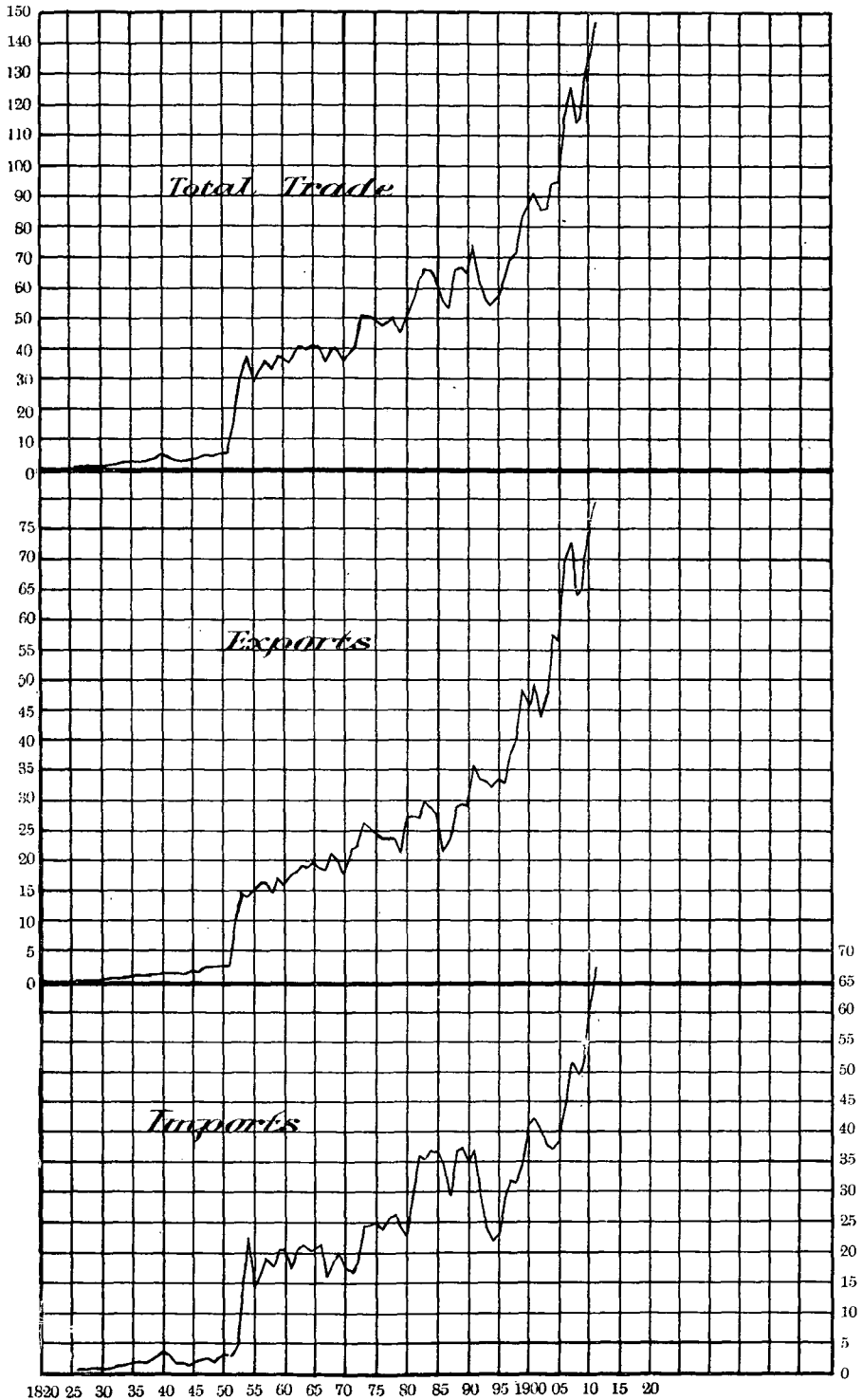
#### COMMONWEALTH IMPORTS OF PREFERENTIAL ITEMS OF APPAREL AND TEXTILES RECORDED AS OF UNITED KINGDOM ORIGIN, 1905 to 1910.

Items.	1906.		1907.		1908.		1909.		1910.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
Apparel—	£	%	£	%	£	%	£	%	£	%
Boots and shoes ...	184,915	65.40	195,426	66.28	174,153	64.87	187,690	68.22	238,597	67.23
Gloves ...	80,981	34.80	48,168	17.07	38,320	15.00	49,148	16.75	31,659	10.78
Hats, caps, & bonnets	284,783	77.06	260,853	63.87	208,143	70.36	176,998	66.36	209,443	67.31
Socks and stockings of wool, &c. ...	305,132	97.98	348,307	97.23	*402,040	80.35	367,669	95.73	412,359	95.47
Trimmings & Ornaments ...	128,135	42.40	86,317	25.73	54,860	26.69	49,130	31.30	46,547	25.85
Other apparel ...	1,083,054	75.32	1,040,855	67.28	905,922	68.26	906,615	66.90	1,044,336	66.08
Textiles, etc. — Piece goods — Cotton and linen, n.e.i. ...	3,023,372	91.18	3,266,665	89.90	2,946,313	89.71	3,208,581	88.71	3,929,845	88.35
Woolen or containing wool ...	1,705,086	83.36	1,849,153	80.62	1,580,004	78.74	1,595,509	81.18	1,815,245	84.57
Silk or containing silk (not containing wool) ...	99,834	14.19	106,008	11.73	68,676	7.61	89,534	10.31	115,003	12.19
Velvets, velveteens, plushes, ribbons, lace, etc. ...	234,577	40.56	235,214	27.67	233,384	23.92	278,786	25.48	274,450	22.52
Flannelettes ...	203,663	80.30	228,240	81.85	193,142	79.63	127,466	81.40	138,098	52.50
Other textiles & manufactured fibres ...	906,800	88.75	1,060,702	85.23	916,843	83.98	1,001,346	85.35	1,255,444	
Total apparel & textiles	8,240,338	75.92	8,725,908	70.20	7,716,800	68.35	8,038,772	69.26	9,511,026	70.31

\* Includes cotton socks which were subject to preferential rates to the 29th April only. No separate record was made of the imports of cotton socks during 1908.



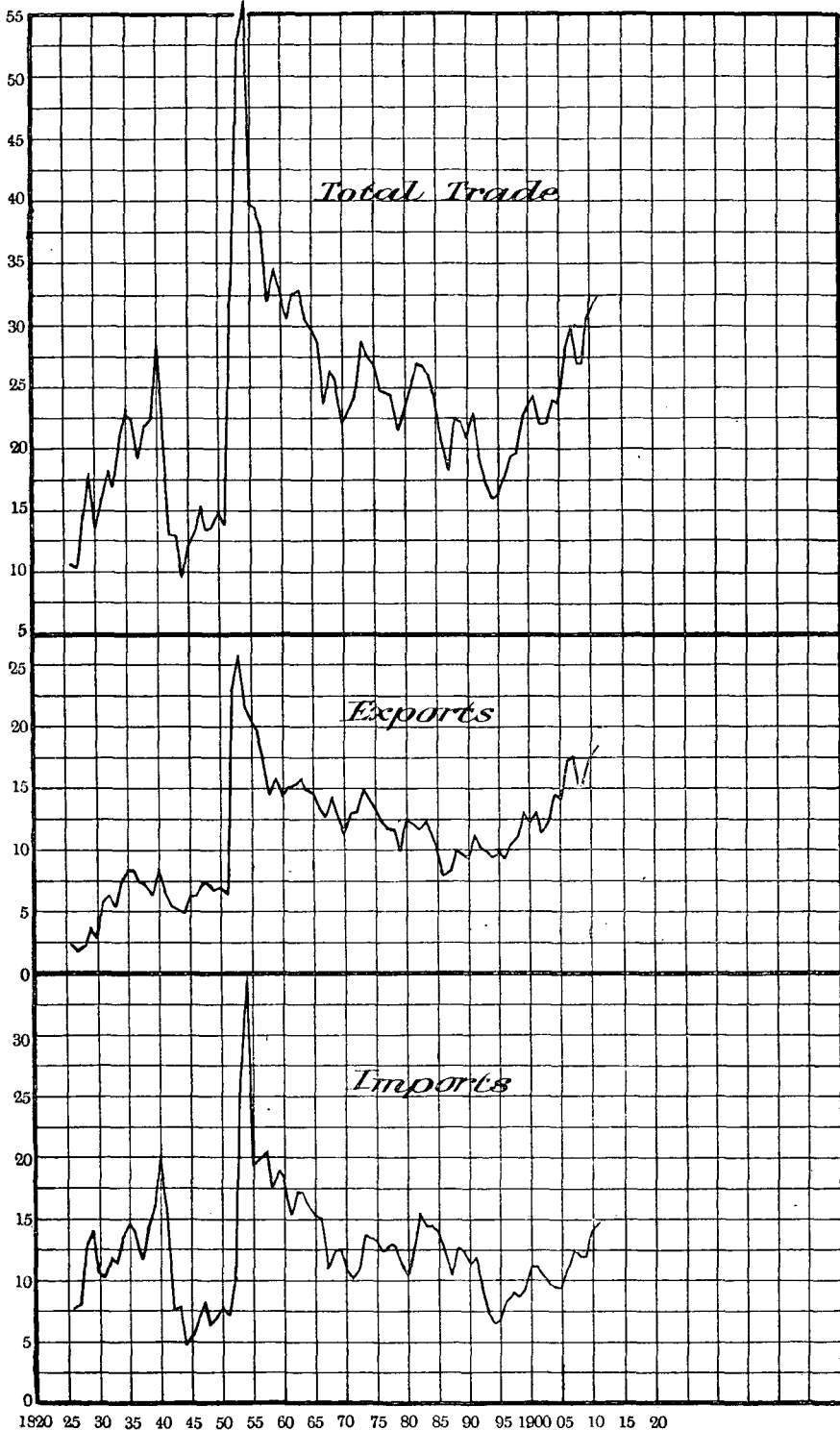
GRAPHS SHEWING VALUES OF TOTAL TRADE, EXPORTS, AND IMPORTS OF  
COMMONWEALTH, 1826 TO 1911.



(See pages 602 and 603.)

EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height five million pounds sterling for Imports and Exports, and ten million pounds sterling for Total Trade. Scale for Imports on right hand.

GRAPHS SHEWING THE VALUES PER HEAD OF POPULATION OF TOTAL TRADE,  
EXPORTS AND IMPORTS OF COMMONWEALTH, 1826 to 1911.



(See pages 602 and 603).

EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height fifty shillings per head of the population. The basic lines of Imports and Exports are *nil* per head, and that of Total Trade is five pounds sterling per head.

The items "gloves," "trimmings and ornaments," and "silk and velvet piece goods," appear to furnish further definite instances of misdescription in the earlier years under review. These goods are largely gathered from other parts of the world into the United Kingdom, whence they are shipped to Australia. The records for 1909 shew that, of the total imports into the Commonwealth of these four items taken conjointly, only 19.34 per cent. was of United Kingdom origin, while as much as 83.63 per cent. was shipped from that country. Under these circumstances it appears probable that, until the question of revenue arose (viz., in August, 1907), some portion of these goods, merely packed in the United Kingdom, was recorded as of British manufacture. This suggestion is again supported by the British trade returns, for although the items presented therein are not identical with the items in the Commonwealth returns, it may be seen that the exports from the United Kingdom to Australia of British silk manufactures bear to the imports into the Commonwealth of silk, etc., piece goods the same ratio in 1908 as in 1905, viz., 10.88 per cent., instead of declining, as shewn by the Commonwealth records, from 24.97 per cent. to 7.61 per cent., while in subsequent years the two records are consistent.

**COMMONWEALTH IMPORTS OF NON-PREFERENTIAL ITEMS OF APPAREL AND TEXTILES RECORDED AS OF UNITED KINGDOM ORIGIN, 1906 to 1910.**

Items.	1906.		1907.		1908.		1909.		1910.	
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
	£	%	£	%	£	%	£	%	£	%
Apparel—Socks & stockings of cotton	53,766	35.68	48,207	29.66	*	...	40,639	25.06	48,697	27.37
Other	80,272	81.11	97,228	76.00	67,067	72.94	56,474	48.50	57,612	47.71
Minor Articles for—										
Boots and shoes	29,791	55.82	33,340	56.73	31,585	57.07	31,735	60.87	35,044	51.80
Hats and caps	61,062	45.44	42,937	29.78	39,279	31.81	58,236	30.70	59,695	25.54
Umbrellas	13,021	98.72	20,902	96.26	33,387	97.86	32,456	96.24	40,211	93.87
Other apparel	174,638	73.93	153,600	65.83	129,852	57.15	156,040	48.38	171,461	44.55
Piece goods—Canvas & duck	114,710	46.88	107,792	89.05	142,855	92.26	164,095	90.97	212,779	89.62
Hessians	...	...	47,840	19.14	27,304	14.63	51,593	24.65	50,268	21.44
Other	48,311	78.24	69,551	79.28	80,134	83.69	84,222	74.92	114,352	69.18
Sewing silks, threads, etc.	250,472	89.35	317,519	87.76	315,109	89.50	312,217	89.88	360,900	91.90
Tents and flags	2,076	87.75	4,147	91.49	5,159	85.64	3,816	96.58	12,734	98.30
Cordage and twine	159,182	86.36	200,030	90.03	200,449	88.09	196,241	84.43	215,371	90.81
Bags and sacks	18,307	1.63	10,573	0.95	2,191	0.22	5,432	0.45	6,218	0.39
Total	1,045,608	39.72	1,153,666	39.66	1,074,671	42.08	1,193,196	37.77	1,385,342	35.42

\* Not recorded apart from woollen socks and stockings in this year.

**COMMONWEALTH IMPORTS OF METALS AND MANUFACTURES OF METALS (INCLUDING MACHINERY), 1905 to 1910.**

**PREFERENTIAL.**

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905	2,690,043	72.77	13,597	0.37	993,252	26.86	3,696,892	100
1906	3,132,437	73.35	17,492	0.41	1,121,241	26.24	4,271,170	100
1907	4,401,531	75.93	25,926	0.45	1,384,530	23.82	5,811,987	100
1908	4,271,659	75.53	9,765	0.17	1,374,903	24.30	5,655,727	100
1909	4,517,994	76.95	144,933	2.47	1,308,538	20.58	5,871,465	100
1910	4,834,293	73.13	17,384	0.26	1,750,351	26.61	6,611,028	100

**NON-PREFERENTIAL.**

	£	%	£	%	£	%	£	%
1905	1,793,631	51.40	129,747	3.72	1,566,421	44.88	3,489,799	100
1906	2,416,705	53.22	92,978	2.05	2,080,556	44.73	4,540,239	100
1907	3,180,805	54.90	209,725	3.62	2,403,455	41.48	5,793,985	100
1908	2,942,084	53.85	189,632	3.47	2,332,059	42.68	5,463,775	100
1909	2,934,101	53.91	201,511	3.70	2,307,684	42.39	5,443,296	100
1910	3,478,432	51.90	325,299	4.85	2,898,362	43.25	6,702,093	100

**COMMONWEALTH IMPORTS OF PRINCIPAL ITEMS OF METALS, ETC., INCLUDING  
MACHINERY, RECORDED AS OF UNITED KINGDOM ORIGIN, 1906 to 1910.**

**PREFERENTIAL.**

Items.	1906.		1907.		1908.		1909.		1910.	
	Amount.	%	Amount.	%	Amount.	%	Amount.	%	Amount.	%
	£		£		£		£		£	
Iron & steel girders, beams, etc. ...	55,453	67.65	64,366	68.88	72,900	65.28	77,648	82.61	138,588	82.92
Plate & sheet (corrugated or galvd.)	1,032,118	96.54	1,279,440	94.36	1,098,985	97.42	1,375,433	95.36	1,590,746	92.37
Rails, fishplts., etc.	132,522	38.93	562,610	89.46	530,678	66.93	436,872	54.40	399,547	48.69
Tinned plates ...	257,112	99.48	247,650	99.55	284,564	99.97	284,446	99.91	355,395	99.99
	1,477,205	84.41	2,154,066	92.57	1,987,217	85.75	2,174,399	82.86	2,484,276	81.04
Machinery ...	570,497	64.18	775,673	62.15	922,615	72.64	1,015,163	77.06	691,224	63.46
Cutlery and plated-ware ...	257,799	82.82	318,324	83.63	284,732	83.00	320,067	84.65	394,239	85.17
Other manufactures of metals ...	826,936	62.62	1,153,468	62.15	1,077,095	62.44	1,008,365	65.20	1,264,554	63.43
	1,655,232	65.65	2,247,465	64.50	2,284,442	68.44	2,343,595	72.18	2,350,017	66.28
Total ...	3,132,437	73.35	4,401,531	75.73	4,271,659	75.53	4,517,994	76.95	4,834,293	73.12

**NON-PREFERENTIAL.**

Iron and steel—										
Pig ...	146,368	96.45	162,815	90.16	89,341	87.51	129,212	92.68	105,596	77.10
Bar, rod, angle, and tee ...	347,676	78.80	475,748	79.31	425,900	74.20	393,939	70.88	552,788	70.37
Hoop ...	27,164	50.89	42,513	62.40	29,800	51.28	25,248	41.35	27,604	41.63
Ingots, blooms & slabs ...	5,130	18.20	10,470	26.23	3,107	10.36	7,556	23.69	9,910	19.30
Plate and sheet—										
plain ...	111,998	55.98	179,928	62.98	131,379	60.84	148,537	59.46	201,788	61.08
Scrap ...	49,305	97.54	44,989	88.64	45,194	94.59	37,125	93.17	48,118	98.91
	687,641	74.34	916,463	74.83	724,721	70.50	741,617	68.80	945,804	66.63
Machinery—										
Agricultural dairy-ing, etc. ...	53,385	12.51	53,491	10.32	61,964	14.21	81,458	17.10	96,029	13.63
Engines—										
Gas and oil ...	98,983	76.18	113,035	73.70	79,553	70.03	103,554	74.66	124,732	73.59
Sewing machines	13,608	9.66	12,789	6.76	64,249	36.85	86,038	45.70	106,849	42.17
Other machinery and mach. tools	250,974	49.97	324,889	50.55	542,484	54.16	472,127	52.61	620,046	53.55
Tools of trade ...	161,523	47.32	219,907	45.98	233,980	43.51	216,568	52.42	287,341	52.48
Wire—Iron & steel	40,578	7.80	52,365	9.67	71,282	12.66	75,435	13.64	115,555	16.51
Other ...	25,558	54.16	96,335	72.82	73,112	59.93	49,348	48.86	104,039	65.82
Wire netting ...	378,347	72.60	400,708	68.90	309,853	67.56	216,186	58.85	159,291	55.42
Other metals and man'fact. thereof	705,608	71.64	990,823	74.44	780,886	73.68	891,770	72.21	918,746	70.42
	1,729,064	47.84	2,264,342	49.55	2,217,363	49.98	2,192,484	50.22	2,532,628	47.94
Total ...	2,416,705	53.22	3,180,805	54.90	2,942,084	53.85	2,934,101	53.91	3,478,432	51.90

The records of the imports of metals and metal manufactures may be accepted as free from the defects previously alluded to in regard to apparel and textiles. The proportion of metal goods of foreign origin received via the United Kingdom is relatively small.

This group also affords a more satisfactory basis of comparison on which to measure the effects of preference than does the textile group, for the reason that the value of the trade is more even between the two divisions (preferential and non-preferential), and further, the character of the goods in one division does not differ from that in the other, whereas, in the textile groups, the goods embraced in the preferential division represent 77.5 per cent. of the total of the group and differ somewhat in character from those in the non-preferential division.

The above tables shew that, in the total trade affected by preference, the United Kingdom's relative position improved somewhat during the years 1907-9, but fell in 1910 to slightly below that of 1906, while in the non-preferential group the improvement during the years 1907-9 was much less marked, and the decline in 1910 as compared with 1906 more pronounced than in the preferential group. This may *prima facie* appear to be the effect of preference. A closer examination, however, shews that of the seven groups of items enumerated in the preferential division, five shewed improvement and two the reverse, and in the non-preferential division, nine items showed improvement and six the reverse. Until it is shewn, therefore, that the influences—whatever their character—which enable the British manufacturer to improve his position in the nine items unassisted by preference were not operative in the items in the preferential division, no indubitable pronouncement in favour of preference can be made.

It is of interest to note that, while in the supply of the less complex forms of metal manufacture in both the preferential and non-preferential divisions the British manufacturers have failed to hold their position as in 1906, in the supply of machinery and the higher forms of manufacture they still shew some slight improvement, notwithstanding the decline as compared with 1909. It should also be remarked that the general tendency of the movement of the relative position of the United Kingdom was in evidence before the introduction of preference, both in the downward movement of the simpler manufactures and in the upward movement of the more complex.

It might also be suggested that the failure of the United Kingdom to maintain for an indefinite period, without extreme protective measures in its favour, the same relatively high position (in an increasing volume of trade and in opposition to the highly organised competition of other nations of more recent industrial development) formerly held by it, should not, *per se*, be taken as evidence of waning industrial or commercial virility.

Taking together the two groups of the simpler forms of iron and steel manufactures, enumerated in the above tables, it appears that in 1905\*, of a total trade of £2,051,077, the United Kingdom supplied £1,758,638, or 85.74 per cent., while in 1910, when the total value of the same trade had increased to £4,484,725, she supplied £3,430,080, representing, however, only 76.48 per cent. Thus, though the United Kingdom increased her sales to the Commonwealth by £1,671,442, while similar sales by all other countries increased only by £762,206, the relative proportion of the trade supplied by the United Kingdom fell from 85.74 per cent. in 1905 to 76.48 per cent. in 1910. Moreover, in iron and steel plates, pig and scrap iron, and tinned plates—representing, in 1910, a total value of £2,596,747, the United Kingdom had 88.63 per cent.—practically a monopoly. That such a monopoly should be maintained by her, in the face of the circumstances referred to above and in view of the rapidly increasing volume of the world's trade, is scarcely to be expected.

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\* For 1905 figures, see Year Book No. 4.

The items responsible for the lower position of the United Kingdom in the preferential group of metal manufactures in 1910 as compared with 1907 are iron, plate and sheet (corrugated or galvanised), and rails, fishplates, etc.

The decline in the United Kingdom's share of the trade in corrugated or galvanised iron (sheet and plate) was due to increased sales by the United States, which in 1910 were nearly double those of 1909, the amounts being—1909, £64,805, and 1910, £128,010. It will be observed, however, that the United Kingdom still had over 90 per cent. of the trade. The proportions of rails and fishplates, etc., supplied by the United Kingdom shew remarkable fluctuations.

The countries from which the principal supplies of rails, fishplates, etc., were drawn, and the percentage proportion supplied by each, are shewn in the following table:—

### IMPORTS INTO THE COMMONWEALTH OF IRON AND STEEL RAILS, Etc.,

1906 TO 1910.

Country of Origin.	1906.		1907.		1908.		1909.		1910.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£	%	£	%	£	%	£	%	£	%
United Kingdom ...	132,522	38.93	562,610	89.46	530,678	66.92	436,872	54.39	399,547	48.69
Canada ...	—	—	—	—	—	—	132,963	16.55	8	—
Belgium ...	95,939	28.18	19,599	3.12	9,852	1.24	21,693	2.70	14,806	1.80
Germany ...	36,575	10.74	37,969	6.04	44,057	5.56	70,201	8.74	33,864	4.13
Russia ...	—	—	—	—	36,300	4.58	—	—	—	—
Utd. States of America	75,144	22.08	7,705	1.22	171,996	21.69	140,300	17.47	371,561	45.27
Other Countries ...	255	0.07	1,048	0.16	45	0.01	1,131	0.15	891	0.11
<b>Total ...</b>	<b>340,435</b>	<b>100.00</b>	<b>628,931</b>	<b>100.00</b>	<b>792,928</b>	<b>100.00</b>	<b>803,160</b>	<b>100.00</b>	<b>820,677</b>	<b>100.00</b>

The very marked decline in 1910 in the United Kingdom's position in the supply of machinery, affected by preference, was due to the completion of large orders for locomotive engines for the New South Wales Government. The position of the United Kingdom in regard to the supply of pig-iron has been affected by the increased imports from India and China. The imports of pig-iron from India were in 1909 valued at £7644, and in 1910 at £17,137, while those from China increased from £160 in 1909 to £11,401 in 1910. The imports of British bar, rod, angle and tee-iron which have rapidly diminished, absolutely as well as relatively, during the years 1908-1909, shew a substantial increase in value in 1910 and an almost complete arrest of the proportional decline. Germany, Belgium, and the United States have been the principal competitors in this trade, and although Germany and Belgium continued to improve their positions in 1910 they did so mainly at the expense of the United States, whose sales fell from £39,789 (7.15 per cent.) to £38,015 (4.84 per cent.).

The position is very similar in regard to iron hoop. In the supply of ingots, blooms, and slabs, the United Kingdom has failed to maintain its position in competition with Germany and Belgium, though in plain sheet and plate it improved its position in company with Belgium and United States, while Germany declined. The relative decline in agricultural implements and machinery accompanied by largely increased sales (already referred to, page 640) was due to abnormal imports mainly from Canada.

The British manufacturers succeeded in capturing from Germany and the United States an increased share in the trade in wire, though in wire netting the British share declined further in favour of Germany.

The large increase in the United Kingdom's share of the imports of sewing machines requires special explanation. In the tariff as introduced on the 8th August, 1907, it was provided that sewing machines manufactured in the United Kingdom should be free, while those from other countries should pay 10 per cent. *ad valorem*. On the 16th November, 1907, the preferential provisions were deleted and all sewing machines became free. In the meantime, in order to procure the advantage of the tariff, the largest firm manufacturing these machines and operating both in the United States and in the United Kingdom, transferred its Australian business from its American to its British branch. Notwithstanding the cessation of preference, and in the face of higher freight charges from Liverpool direct than from New York via Liverpool, this firm, rather than again disturb its business arrangements, continued to supply the Australian trade, in certain classes of machines, from its British branch. This transfer, however, did not carry a corresponding amount of employment to the British operatives, for the reason that, while the Australian business was transferred to the United Kingdom, a corresponding amount of trade—unaffected by any preferential tariffs—formerly supplied by the British branch, was transferred to America.

A further list of items, preferential and non-preferential, recorded as of United Kingdom origin is appended:—

## PRINCIPAL OTHER PREFERENTIAL IMPORTS, 1906 to 1910.

Article.	1906.		1907.		1908.		1909.		1910.	
	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.
	£		£		£		£		£	
Milk—Preserved, concentrated, etc.	21,660	11.44	13,727	8.05	149,673	83.02	135,240	92.64	124,116	91.72
Confectionery, cocoa, chocolate, etc.	230,110	69.03	270,211	67.59	256,989	69.87	295,721	70.24	345,733	70.40
Gelatine, glue, cements	20,912	43.90	19,115	33.14	19,475	45.81	21,367	47.72	25,576	44.92
Yarns	96,706	80.09	128,166	78.42	122,985	82.88	112,409	80.34	142,014	84.38
Oils	27,646	12.87	25,226	11.69	23,526	9.73	24,928	9.39	33,976	9.29
Paints	52,629	73.01	65,278	68.22	70,787	69.67	71,413	73.02	88,246	71.84
Varnishes	55,411	89.34	66,387	83.83	60,076	83.10	63,487	84.83	81,357	83.58
Slates—roofing	14,587	56.74	26,615	62.65	21,920	59.25	20,444	73.26	28,515	71.59
Leather	51,341	77.86	60,550	83.02	50,981	84.96	51,889	84.62	69,259	84.32
Rubber, manufactures of	124,310	60.06	136,463	58.82	138,310	51.55	130,118	38.94	182,157	46.34
Furniture, etc.	60,010	27.43	69,200	27.09	43,463	25.13	63,786	37.10	63,093	31.98
Wood manufactures	24,574	24.55	40,229	26.97	34,036	22.94	35,601	31.95	37,761	29.60
China & earthenware	156,501	64.40	216,869	64.38	198,738	63.46	172,382	66.28	217,193	65.50
Glass and glassware	66,050	25.09	90,609	27.02	78,359	27.58	68,925	25.28	84,096	26.46
Cement (Portland)	25,576	35.64	23,638	46.33	48,517	53.74	45,153	58.14	79,032	56.96
Tiles—roofing	10,716	39.54	17,766	46.22	18,671	53.51	20,851	57.63	23,498	60.99
Paper	120,796	42.37	280,836	52.33	270,159	51.01	281,975	57.46	333,067	56.92
Stationery	189,940	72.48	194,555	64.70	180,664	62.42	163,980	63.85	186,897	64.54
Timepieces, jewellery, and fancy goods	477,815	54.71	483,120	46.58	383,826	43.15	427,331	46.97	473,518	46.00
Arms...	25,112	32.01	28,392	35.34	51,718	60.07	39,356	45.01	39,599	45.05
Percussion caps, cartridges, etc.	84,096	50.12	82,999	54.72	76,846	63.07	74,823	54.33	69,439	53.32
Detonators and fuse...	40,634	95.42	42,984	98.06	36,797	96.28	45,950	97.94	40,087	97.12
Dynamite, gunpowder	347,380	77.68	277,394	82.29	293,002	77.98	324,699	76.02	307,130	70.86
Bags, baskets, etc.	38,003	42.51	42,038	33.59	44,000	33.55	47,026	31.42	54,706	29.79
Brushware	87,546	60.06	89,025	53.58	57,255	54.16	56,981	56.23	73,194	55.41
Blackings, etc.	40,882	64.01	55,502	66.39	38,961	72.24	33,359	68.17	12,444	48.01
Electrical articles and materials	179,123	69.28	233,439	68.72	271,453	73.68	164,446	74.16	277,105	77.49
Matches	34,491	26.43	44,848	28.74	59,264	32.68	57,716	37.03	59,043	39.89
Pianos and parts...	24,773	10.24	43,663	13.94	24,886	10.11	34,549	13.16	46,067	13.58
Oilmen's stores	37,055	52.68	57,124	63.63	55,777	71.21	63,427	68.22	78,803	71.04
Vehicles, bicycles, tricycles, etc.	268,067	61.95	418,019	65.32	416,637	61.14	490,957	61.56	669,993	56.30

## PRINCIPAL NON-PREFERENTIAL IMPORTS, 1906 to 1910.

Article.	1906.		1907.		1908.		1909.		1910.	
	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.
	£		£		£		£		£	
Fish ...	118,529	32.30	135,420	35.13	146,616	29.05	143,694	31.13	147,793	26.50
Meats ...	29,445	48.46	23,271	49.65	26,366	48.05	24,901	46.85	34,260	51.44
Grain, prepared (malt, oatmeal, etc.)	69,407	80.96	61,412	76.81	69,558	76.83	37,867	68.84	36,825	67.94
Hops ...	13,460	22.11	7,604	15.30	7,934	19.24	6,430	16.95	9,097	15.12
Oilmen's stores (free)	50,812	87.41	48,694	82.27	55,075	77.48	72,125	80.88	88,500	82.73
Mustard	41,449	98.30	45,956	98.07	39,979	99.25	46,074	99.13	48,625	98.80
Tobacco, mfd. (cigars, cigarettes, etc.)	31,557	9.40	35,238	10.76	31,941	10.24	37,850	13.12	44,122	13.63
Oils and greases	129,646	33.16	138,834	29.17	178,008	38.33	177,523	40.20	231,648	37.89
Paints and colours	190,569	87.32	232,623	85.88	213,272	86.72	207,909	85.27	233,395	85.52
Marble and stone	11,380	30.55	14,071	26.91	13,595	29.49	16,222	29.85	13,445	25.04
India-rubber manufcts.	39,637	24.58	41,132	22.10	38,607	23.01	44,726	26.21	50,642	17.50
Leather, manufacts.	119,999	27.17	114,009	25.44	88,347	23.10	58,655	19.99	95,494	21.58
Harness—minor articles for	47,138	96.06	62,148	94.73	61,594	96.46	68,542	97.12	92,602	96.39
Furniture—minor articles for	94,934	79.05	34,801	74.10	36,242	70.80	50,931	76.10	52,033	77.52
Earth-ware, Bricks, etc	12,246	81.63	19,321	82.02	25,767	69.01	30,564	69.26	37,289	66.19
Glass and Glassware...	27,094	65.56	28,247	48.15	41,189	49.63	39,039	44.04	50,439	50.30
Paper...	320,162	42.45	255,238	36.63	280,859	32.99	305,451	39.86	385,543	41.08
Books, printed	416,523	91.97	424,045	92.02	421,458	89.13	465,719	90.34	501,495	88.83
Stationery	54,215	64.24	44,449	62.48	63,868	69.67	33,041	47.64	41,936	52.91
Instruments, scientific	11,583	73.89	13,803	66.35	21,498	72.69	17,709	67.09	22,707	69.60
do., surgical & dental	37,564	51.21	40,136	46.12	41,256	45.41	41,412	44.69	45,338	42.56
Drugs and chemicals—										
Insecticides, disin-										
fectants, etc.	39,844	75.87	35,070	67.72	38,057	71.27	30,337	69.97	33,927	63.08
Medicines	135,867	62.43	146,689	62.63	133,427	58.49	123,428	58.13	157,712	61.95
Essential oils	20,543	53.93	19,092	42.87	14,675	28.91	8,067	24.93	11,517	27.01
Acids	9,830	17.80	11,361	23.08	23,605	31.35	20,518	44.04	24,047	40.48
Cyanide of potassium	193,102	85.23	174,571	84.94	208,773	91.04	196,548	83.63	233,110	88.74
Sodas (exclud. soda nitrate)	76,430	93.02	82,699	94.80	72,941	92.35	79,095	92.03	117,228	94.42
Fertilisers	114,909	26.84	100,331	25.79	83,745	18.96	74,014	20.52	124,468	18.58
Other drugs	174,062	35.21	200,009	31.73	168,358	27.68	135,879	23.13	138,943	25.79
Musical instruments (not pianos) & parts	20,890	21.81	29,952	26.74	18,007	21.17	19,958	23.63	26,854	24.09
Soap	39,923	50.24	47,692	46.12	35,574	46.13	34,994	46.44	45,853	43.69
Ships	358,000	97.75	655,760	96.34	672,000	95.98	749,950	99.05	687,500	96.58

6. **General Conclusions as to Preference.**—It will be seen from the foregoing that in order to determine in the early years of preference whether it has been efficient or not, it would be absolutely necessary to have correct records on the same basis for the years preceding the preferential scheme. There is every reason to believe that the records, in many instances, are not sufficiently accurate to allow of just comparisons being made. It is also obvious that a much more detailed analysis is essential than has ordinarily been thought necessary, and it will only be in the course of a number of years that anything like a definite opinion can be reached as to the efficiency of the preferential treatment, for as Professor W. J. Ashley in his preface to Mr. John Holt Schooling's "British Trade Book" says—"No comparison of isolated years, no comparison of short consecutive periods, can be relied upon to give properly comparable data."

Primarily, it will be necessary in some way to eliminate the normal growth in business which would have taken place under any régime whatever in an advancing country; and secondly, the significance of the statistics will depend upon a very rigid adherence to the same method of description in regard to items. If the practice of recording is as variable in the future as it has been in the past, no real deductions can be drawn, and this goes to shew the importance of maintaining the same method of describing items, quite irrespective of their significance from the standpoint merely of revenue.

In order to determine the course of trade, it will be essential to maintain in its integrity for a sufficient number of years any classification of items once adopted, and no practicable means of analysis will enable one to penetrate the significance of the trade if



that course is not followed, because the determining effect of a preference which, in its nature, is likely to be not too well marked compared with the other elements of growth, can easily be vitiated by the entering of other possibilities of change into the results.

7. **Preferential Tariff of New Zealand.**—"The Preferential and Reciprocal Trade Act 1903" of New Zealand introduced preferential rates of duty in favour of the produce of the British Dominions by imposing extra duties on certain imports which were the produce or manufacture of other countries. The list of preferential items was materially extended by the New Zealand "Tariff Act 1907," from the 31st March, 1908.

The following tables present an analysis of the imports into New Zealand during 1910, distinguishing those which would be affected by an application of the preferential provisions of the "Tariff Act 1907":—

**NEW ZEALAND.—IMPORTS, 1910, PREFERENTIAL AND NON-PREFERENTIAL.**

Particulars.	From United Kingdom and British Possessions.	From Foreign Countries.	Total.
Imports affected by preferential tariff—	£	£	£
Free ... ..	1,520,145	—	1,520,145
Dutiable ... ..	2,748,452	1,000,267	3,748,719
Total ... ..	4,268,597	1,000,267	5,268,864
Imports not affected by preferential tariff—			
Free ... ..	5,515,306	1,403,894	6,919,200
Dutiable ... ..	4,112,480	447,529	4,560,009
Total ... ..	9,627,786	1,851,423	11,479,209
Total merchandise ... ..	13,896,383	2,851,690	16,748,073
Bullion and Specie ... ..	302,627	883	303,510
Total ... ..	14,199,010	2,852,573	17,051,583

NOTE.—In this table the imports affected by the preferential provisions of the tariff are stated, as far as possible, according to the country of origin; those unaffected by preference according to country of shipment, the country of origin of these not being recorded. Without doubt imports from the United Kingdom and British Possessions include goods of foreign origin.

**NEW ZEALAND.—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES, 1910.**

**FROM UNITED KINGDOM AND BRITISH POSSESSIONS.**

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
	£	£	Rate %	£	Rate %
(A) Free ... ..	1,520,145	...	...	282,618	18.59
(B) Dutiable ... ..	2,748,452	555,452	20.21	809,153	29.44
Total ... ..	4,268,597	555,452	13.01	1,091,771	25.58

NEW ZEALAND—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES,  
1910—Continued.

## FROM FOREIGN COUNTRIES.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
	£	£	Rate %	£	Rate %
Imports similar to group A above	98,688	14,569	14.76	...	...
" " " B "	901,579	272,330	30.21	184,407	20.45
Total ... ..	1,000,267	286,899	28.68	184,407	18.44

8. **Preferential Tariff of South Africa.**—Preference to goods of United Kingdom origin was first granted by the South African Customs Union Convention of 1903 from the 15th August of that year, and similar treatment was extended to Canada from the 1st July, 1904. The present preferential tariff of the South African Customs Union (Convention, 1906, and amendments, 1908) applies to produce of United Kingdom, Canada, New Zealand and the Commonwealth.

An analysis of the trade of South Africa is appended :—

## SOUTH AFRICA.—IMPORTS, 1910, PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	From United Kingdom and Reciprocating Countries.	From other Countries.	Total.
Imports affected by preferential tariff—	£	£	£
Free... ..	6,048,659	...	6,048,659
Dutiable ... ..	15,698,261	8,939,016	24,637,277
Total ... ..	21,746,920	8,939,016	30,685,936
Imports not affected by preferential tariff—			
Free... ..	2,971,090	1,538,286	4,509,376
Dutiable ... ..	726,498	1,990,516	2,717,014
Total ... ..	3,697,588	3,528,802	7,226,390
Total merchandise ... ..	25,444,508	12,467,818	37,912,326
Bullion and specie ... ..	1,892,725	300,481	2,193,206
Total ... ..	27,337,233	12,768,299	40,105,532

NOTE.—Owing to difficulty in applying the tariff rates to the statistical items, the above results must be taken as approximate only.

## SOUTH AFRICA.—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES, 1910.

## FROM UNITED KINGDOM AND RECIPROCATING BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
	£	£	Rate %	£	Rate %
(A) Free ... ..	6,048,659	...	...	181,460	3.00
(B) Dutiable ... ..	15,698,261	2,234,416	14.24	2,751,253	17.53
Total ... ..	21,746,920	2,234,416	10.27	2,932,713	13.49

FROM FOREIGN COUNTRIES.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
		£	Rate %	£	Rate %
Imports similar to group (A) above	4,461,822	133,855	3.00	...	...
"                    (B)    "	4,477,194	808,698	18.06	668,471	14.93
Total      ...      ...      ...	8,939,016	942,553	10.54	668,471	7.48

The published trade returns of Canada do not permit of an analysis similar to those given for the Commonwealth, New Zealand, and South Africa.

10. **Preferential Tariff Comparisons.**—The following table presents a comparative statement of the imports into the Commonwealth, New Zealand, and South Africa during 1910, the imports of each country having been analysed according to the application of its own tariff.

**APPLICATION OF PREFERENTIAL TARIFFS.—COMPARATIVE STATEMENT, 1910.**

Particulars.	C'wealth of Australia.	Dominion of New Zealand.	Customs Union of South Africa.
1. Total imports of merchandise ...	£ 58,682,391	16,748,073	37,912,326
2. " " from favoured countries	£ 30,048,717	13,896,383	25,444,508
3. Imports affected (favourably or adversely) by preferential rates ...	£ 28,916,955	5,268,864	30,685,936
4. Imports affected (favourably or adversely) by preferential rates, per cent. to total ...	49.71	31.46	80.92
5. Imports from favoured countries, p.c. to item 1	51.21	82.98*	67.10
6. Imports favoured by preferential rates	£ 19,049,506	4,268,597*	21,746,920
7. " " " p.c. to item 1	32.45	25.49	57.35
8. " " " " " " " " " " " "	63.40	30.71	85.46
9. Amount of rebate ...	£ 972,174	536,319	698,297
10. Rate of rebate per cent. <i>ad val.</i> ...	5.10	12.57	3.22

\* See note to table on page 651.

From the foregoing it will be observed that the preferential schemes, as at present in force in the different parts of the empire, are by no means uniform. The preferential tariff of New Zealand applies to a wider range of countries than that of any other part of the empire, inasmuch as the advantage of the lower tariff rates is extended to all parts of the British dominions, while those of Canada and South Africa apply to the United Kingdom and reciprocating British Possessions, and that of the Commonwealth to the United Kingdom only. Apart from the British preferential tariff, however, the Commonwealth, in consideration of its participation in the South African preference, gives a preference to certain products of that country. New Zealand and South Africa have also a special reciprocal trade agreement in addition to the main schemes of preference. Canada, under the Customs Tariff Act of 1907, makes provision for an intermediate tariff, which may be applied to the produce of *foreign* countries. Canada already has a reciprocal trade agreement with France.

The margin between the rates of duty applied to British and foreign goods, respectively, is also higher in New Zealand than in the Commonwealth or South Africa, though in the latter countries the preferential tariff affects a greater proportion of the trade. On the basis of the imports into New Zealand during 1910 the average margin of preference was 12.57 per cent. of the value of the goods, while in the Commonwealth the similar margin was 5.10 per cent., and in South Africa 3.22 per cent. The average rate of duty charged in New Zealand on British goods, subject to preferential rates, was 13.01 per cent., while similar goods of foreign origin were called upon to pay 25.58 per cent. In the Commonwealth the collateral rates were 13.05 per cent. and 18.15 per cent. respectively, and in South Africa 10.27 per cent. and 13.49 per cent.

11. **South African Preference.**—Under the Commonwealth Customs Tariff (South African Preference) Act, No. 17 of 1906, preferential rates of duty were prescribed for certain goods “when those goods are imported from and are the manufacture of any of the British South African Colonies or Protectorates which are included within the South African Customs Union.”

Preference to South African States was further confirmed by the Customs Tariff Amendment Act 1908 (No. 13 of 1908).

The imports during 1910 affected by the above-mentioned Act were as follows:—

**IMPORTS INTO THE COMMONWEALTH DURING 1910 OF ARTICLES ENTITLED TO PREFERENCE UNDER THE SOUTH AFRICAN PREFERENCE ACT, AND THE VALUE OF THE PREFERENCE THEREON.**

Particulars.	Rate of Rebate.	Imports.		Amount of Rebate.
		Quantity.	Value.	
			£	£ s.
Fish—				
Preserved in tins, etc. ... lbs.	½d. per lb.	41,418	1,377	43 3
Grain—				
Maize ... .. cental	6d. per centl.	42,299	12,147	1,057 10
Feathers—				
Undressed ... ..	5 per cent.	—	4,981	249 1
Dressed ... ..	10 per cent.	—	154	15 8
Tobacco manufactured—				
Cut ... .. lbs.	1/3 per lb.	2,791	312	174 8
N.E.I. ... .. lbs.	1/- per lb.	1,672	192	88 12
Total ... ..	—	—	19,163	1,628 2

## § 12. Imports of Dutiable and Free Goods.

1. **Classified Statement of Imports.**—The following table shews, classified according to their nature, and distinguishing between dutiable and free goods, the estimated value of imports entered for home consumption during 1910, together with the amount and equivalent *ad valorem* rates of duty collected thereon. As no record is made of the value, entered for home consumption, of goods subject to specific duties, the value has been estimated on the basis of the value of corresponding imports. The free goods entered for home consumption have been taken to be the total imports of free goods less the value of similar goods re-exported.

**VALUE OF GOODS (EXCLUDING BULLION AND SPECIE) ENTERED FOR CONSUMPTION IN THE COMMONWEALTH AND DUTY COLLECTED THEREON, 1910.**

Classification of Imports.		Value Entered for Consumption.			Duty Collected, less Refunds.	Equivalent <i>ad valorem</i> rate per cent. on—	
		Dutiable.	Free. (Net Imports).	Total.		Dutiable Imports.	All Imports.
		£	£	£	£	%	%
I.	Foodstuffs of animal origin (excluding living animals)	822,502	79,500	902,002	172,888	21.02	19.15
II.	Foodstuffs of vegetable origin and salt ...	2,002,186	168,042	2,170,228	838,893	41.90*	38.65*
III.	Beverages (non-alcoholic) & substances used in making	402,773	1,159,974	1,562,747	82,104	20.39	5.25
IV.	Spirits & alcoholic liquors, including industrial spirits and pharmaceutical preparations dutiable as spirits ...	1,665,455	434	1,665,889	2,423,742	145.50	145.50
V.	Tobacco and preparations thereof ...	610,469	...	610,469	1,039,437	170.28	170.28
VI.	Live animals ...	74,458	256,268	330,726	1,013	1.36	0.31
VII.	Animal substances (mainly unmanufactured) not foodstuffs ...	71,094	296,105	367,199	13,710	19.29	3.73
VIII.	Vegetable substances and fibres ...	148,456	955,419	1,103,875	43,846	29.54	3.97
IX.	Apparel, textiles, and manufactured fibres ...	9,858,391	7,605,134	17,463,525	2,114,389	21.45	12.11
X.	Oils, fats, and waxes ...	837,449	738,180	1,575,629	167,529	20.00	10.61
XI.	Paints and varnishes ...	463,394	22,729	486,123	87,850	18.96	18.07
XII.	Stones and minerals used industrially ...	118,996	351,014	470,010	25,764	21.65	5.48
XIII.	Specie (omitted) ...	...	...	...	...	...	...
XIV.	Metals (unmanufactured) and ores, excluding gold and silver bullion ...	7,406	245,589	252,995	1,133	15.30	0.45
XV.	Metals partly manufactured ...	...	1,011,547	1,011,547	...	...	...
XVI.	Metals manufactured, including machinery ...	7,243,871	4,668,790	11,912,661	1,138,998	15.72	10.18
XVII.	Leather and manufactures of leather and substitutes therefor, also indiarubber and indiarubber manufactures ...	921,111	401,879	1,322,990	194,087	21.07	14.73
XVIII.	Wood and wicker, raw and manufactured ...	2,372,464	227,452	2,599,916	389,149	16.40	14.97
XIX.	Earthenware, cements, china, glass, & stoneware ...	944,043	63,977	1,008,020	267,808	28.37	26.78
XX.	Paper and stationery ...	729,455	1,664,756	2,394,211	184,421	25.25	7.70
XXI.	Jewellery, timepieces, and fancy goods ...	1,045,788	349,387	1,395,175	265,659	25.40	19.04
XXII.	Optical, surgical, & scientific instruments ...	97,098	300,949	398,047	18,156	18.70	4.56
XXIII.	Drugs, chemicals, and fertilisers ...	418,821	1,719,957	2,138,778	85,318	20.37	3.99
XXIV.	Miscellaneous ...	2,472,886	2,654,926	5,127,812	508,746	20.58	9.92
	Total merchandise ...	33,328,566	24,940,008	58,268,574	10,064,640	30.20	17.27
	Merchandise, excluding stimulants and narcotics	31,052,642	24,939,574	55,992,216	6,601,461	21.26	11.79

\* The increase in the average *ad val.* rate of duty paid in this class as compared with 1908 (see previous issue) is mainly due to increased imports of sugar, which paid duty equivalent to an *ad val.* rate of 53 per cent., and to increased imports of dried fruits at an *ad val.* rate of over 100 per cent.

2. **Comparative Rates of Duty.**—Omitting bullion and specie, the proportion of total merchandise entered for “home consumption” free of duty in the undermentioned countries, and also the equivalent *ad valorem* rates of duty charged are as follows:—

## PROPORTION OF FREE GOODS AND RATES OF IMPORT DUTY.

Particulars.	Australia.		Canada.	New Zealand.	U.S. of America.
	31/12/06	31/12/10	31/3/10	31/12/10	30/6/10
Year ended ... ..					
Percentage of free merchandise ...	35.18	42.80	38.55	50.39	49.21
Equivalent <i>ad valorem</i> rates of duty on	%	%	%	%	%
Spirits, wines, and malt liquors	153.23	145.50	136.12	149.30	73.63
Tobacco, and preparations thereof	168.65	170.28	20.57*	128.92	81.55
Other dutiable merchandise ...	17.04	21.26	24.24	22.72	38.99
Other merchandise dutiable & free	10.75	11.79	14.89	10.71	19.12
Total dutiable merchandise ...	27.14	30.20	26.71	35.52	41.52
Total merchandise dutiable & free	17.59	17.27	16.41	17.64	21.11
Customs duty per head ...	£ s. d. 1 15 10	£ s. d. 2 5 6	£ s. d. 1 14 5	£ s. d. 2 19 6†	£ s. d. 0 14 7

\* Unmanufactured tobacco is admitted to Canada free of duty. † Exclusive of Maoris.

In 1906—the last full year of operation of the 1902 tariff—free goods represented 35.18 per cent. of the total imports of merchandise into the Commonwealth. The tariff of 1908 extended the free list so that in 1908 the proportion of free goods increased to 40.35 per cent., in 1909 to 41.10 per cent., and in 1910 to 42.80 per cent. This gradual increase in the proportion of free goods, under the same tariff, appears to indicate some restrictive effect of the protective duties, inasmuch as the imports of free goods, which may be taken as raw materials or goods which cannot yet be advantageously manufactured in Australia, have increased by 30.96 per cent. since 1908, while those of dutiable goods have only increased by 15.20 per cent. The tariff of 1908, while extending the free list, increased the average rates on the goods subject to duty. Excluding drinks and tobacco the average rate of duty on dutiable goods during 1906 was 17.04, in 1908 it was 21.30, and in 1910 it was 21.26. The combined effect of the extension of the free list with an increase of duties on the remaining goods has been that in 1910 the average rate of duty over the total imports of merchandise was 17.27 per cent. against 17.59 per cent. in 1906.

From the above table it will be seen that, excluding spirits, etc., and tobacco, the average rate of duty charged in the Commonwealth on dutiable goods imported during 1910 was about  $1\frac{1}{2}$  per cent. *ad valorem* lower than in New Zealand, and about 3 per cent. lower than in Canada, and was only a little more than one half the rate charged in the United States. On the other hand the proportion of free goods was smaller in the Commonwealth than in New Zealand or the United States, though larger than in Canada. Over the total imports the average *ad valorem* rates charged in the Commonwealth, New Zealand, and Canada do not differ materially, while in the United States the average rate is from  $3\frac{1}{2}$  to 5 per cent. higher. The influence of the various rates charged on stimulants and tobacco in smoothing out the differences in average *ad valorem* rates on the total imports should not be lost sight of. During 1910, 81 per cent. of the value of tobacco imported into Canada was unmanufactured tobacco admitted free of duty, and subject only to excise on manufacture.

## SECTION XVI.

## SHIPPING.

## § 1. General.

1. **Legislation.**—The shipping of the Commonwealth has hitherto been conducted partly under Imperial Acts, consolidated in the Merchants Shipping Act of 1894, and amendments of these, and partly under Acts of the several States of the Commonwealth. Since the scope of the local enactments differs materially in the different States, to define the proper limits of the jurisdiction of the Imperial and State laws cannot here be attempted.

By section 98, Part IV., of the Commonwealth Constitution Act, the power to make laws with respect to trade and commerce was extended to navigation and shipping, and in pursuance of this power a Bill for an Act relating to Navigation and Shipping was introduced into the Senate on the 17th March, 1904, but was not proceeded with.

On the 29th June, 1904, a Royal Commission was appointed to inquire into the Bill and report upon its provisions and any matter incidental thereto. In March and April, 1907, a conference between representatives of the United Kingdom, the Commonwealth of Australia, and New Zealand was held in London on the subject of merchant shipping legislation. The result of the deliberations was that an amended Bill was introduced into the Senate on the 12th September, 1907. Owing to pressure of Parliamentary business, however, the consideration of the Bill was held over. It was reintroduced into the Senate on the 17th September, 1908, but has not yet been passed into law. The Bill was drawn largely on the Merchants Shipping Acts and the Acts of New Zealand and New South Wales, and, as introduced, contains 417 sections divided into eleven parts, as follows:—I. Introductory. II. Masters and Seamen. III. Foreign Seamen. IV. Ships and Shipping. V. Passengers. VI. The Coasting Trade. VII. Wrecks and Salvage. VIII. Pilots and Pilotage. IX. Courts of Marine Inquiry. X. Legal Proceedings. XI. Miscellaneous.

2. **Record of Shipping before Federation.**—Prior to Federation it was customary for each State to regard the matter of shipping purely from the State standpoint, and vessels arriving from or departing to countries beyond Australia, via other Australian States, were recorded as if direct from or to the oversea country. Thus a mail steamer from the United Kingdom, which made Fremantle her first port of call in Australia, would be recorded not only there, but also again in Adelaide, Melbourne and Sydney, as an arrival from the United Kingdom. Consequently any aggregation, especially of the recent shipping records of the different States, would repeatedly include a large proportion of the shipping visiting Australia. In earlier years, when many vessels sailed from the

various State ports direct for their destination, the error of repeated inclusion was less serious, but as the commerce of Australia developed, more and more ports of call were included in the voyage of each vessel, and this made the mere aggregation of State records correspondingly misleading. It has, as a matter of fact, led to some erroneous publications of statistical results and deductions.

**3. Shipping since Federation.**—With the inauguration of the Commonwealth, the statistics of its shipping, especially of its oversea shipping, became of greater intrinsic importance. As an index of the position of Australia among the trading countries of the world, such statistics had a constitutional importance commensurate with Commonwealth interests, and correspondingly greater than those of individual States, and the nationality of the shipping trading with Australia became also a matter of greater moment.

**4. Difficulties of Comparisons of Total Shipping.**—From what was said in paragraph 2 above, it is obviously impossible now to obtain results for Australia not subject to the defect of repeated inclusions of the same vessels. Unfortunately the statistical records of the first three years of Federal history are subject to the same defect, and do not admit of direct comparison with those now kept. A careful estimate of the extent and effect of repeated inclusion has been made and applied to the records of the earlier years, so as to extend the comparative results to those years. The error of such estimation will be negligible for comparative purposes.

**5. Present System of Record.**—The present system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each visit to the Commonwealth. Repeated voyages of any vessel are of course included.

On arrival of every vessel at a port in the Commonwealth, whether from an oversea country or from another port within the Commonwealth, the master is required to deliver to the Customs officer a form giving all particulars, necessary for statistical purposes, in regard to the ship, passengers and crew. Similarly on departure from a port a form containing corresponding information is lodged. These forms, which provide a complete record of the movements of every vessel in Commonwealth waters, are at the end of each month forwarded by the Customs officer at each port to the Commonwealth Bureau of Statistics, and furnish the material for the compilation of the Shipping and Migration Returns.

Under the system previously in force it was found that the estimates of population, in so far as they were based on seaward movement, were very unsatisfactory, and it is believed that the method referred to above will give decidedly better results.

## § 2. Oversea Shipping.

**1. Total Oversea Shipping.**—In order to extend, as indicated, the comparison of the oversea shipping to the earliest years for which any records are available, an estimate of its probable amount has been made. This estimate is based on a comparison of the results obtained by merely aggregating State statistics with the defect of multiple records, and the results obtained under the present system, which avoids the multiple record. From the nature of the case it is obvious that the ratio of repeated inclusion to the total traffic has been continually advancing, and this fact has been duly taken into account in deducing the results in the following table:—



**TOTAL OVERSEA SHIPPING ENTERED AND CLEARED THE COMMONWEALTH, 1822  
to 1910 (MULTIPLE RECORD EXCLUDED BY ESTIMATION PRIOR TO 1904).**

Year.	Vessels.	Tons.	Year.	Vessels.	Tons.	Year.	Vessels.	Tons.
1822	73	30,683	1852	1,896	844,243	1882	3,652	3,010,944
1823	76	30,543	1853	3,364	1,490,422	1883	3,857	3,433,102
1824	71	29,029	1854	3,781	1,744,251	1884	4,315	4,064,947
1825	90	30,786	1855	3,239	1,449,657	1885	4,052	3,999,917
1826	65	23,587	1856	2,669	1,195,794	1886	3,793	3,853,246
1827	95	29,301	1857	2,842	1,530,202	1887	3,454	3,764,430
1828	124	38,367	1858	2,607	1,378,050	1888	3,933	4,464,895
1829	185	56,735	1859	2,759	1,403,210	1889	3,897	4,460,426
1830	195	56,185	1860	2,464	1,288,518	1890	3,363	4,150,027
1831	185	52,414	1861	2,466	1,149,476	1891	3,778	4,726,307
1832	206	59,628	1862	2,917	1,389,231	1892	3,432	4,239,500
1833	241	72,647	1863	3,378	1,564,369	1893	3,046	4,150,433
1834	249	77,068	1864	3,344	1,537,433	1894	3,397	4,487,546
1835	310	96,928	1865	3,005	1,317,934	1895	3,331	4,567,883
1836	310	93,974	1866	3,378	1,470,728	1896	3,309	4,631,266
1837	442	113,432	1867	2,927	1,277,679	1897	3,279	4,709,697
1838	471	132,038	1868	3,080	1,350,573	1898	3,222	4,681,398
1839	652	191,507	1869	3,107	1,472,837	1899	3,356	5,244,197
1840	915	277,335	1870	2,877	1,381,878	1900	3,719	5,894,173
1841	900	278,738	1871	2,748	1,312,642	1901	4,028	6,541,991
1842	862	232,827	1872	2,788	1,380,466	1902	3,608	6,234,460
1843	736	183,427	1873	3,159	1,609,067	1903	3,441	6,027,843
1844	629	155,654	1874	3,153	1,728,269	1904	3,700	6,682,011
1845	735	164,221	1875	3,437	1,914,462	1905	4,088	7,444,417
1846	888	211,193	1876	3,295	1,863,343	1906	4,155	7,966,658
1847	1,033	245,358	1877	3,157	1,930,434	1907	4,394	8,822,866
1848	1,182	305,840	1878	3,372	2,127,518	1908	4,051	8,581,151
1849	1,137	355,886	1879	3,344	2,151,338	1909	3,910	8,516,751
1850	1,300	425,206	1880	3,078	2,177,877	1910	4,048	9,333,146
1851	1,576	515,061	1881	3,284	2,549,364			

It will be borne in mind that while the above figures in themselves have no absolute significance, nevertheless, on the assumption that the element of duplication has been in fairly constant ratio, they furnish the best available indication of the growth of Australian oversea shipping.

**2. Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping is indicated in the following table, both absolutely and in respect of tonnage per head of population:—

**OVERSEA SHIPPING OF VARIOUS COUNTRIES.**

Country.	Year.	Tonnage Entered and Cleared.		Country.	Year.	Tonnage Entered and Cleared.	
		Total.	Per Inhabitant.			Total.	Per Inhabitant.
Argentina Rep. ...	1907	22,994,473	4.1	Japan	1909	39,682,953	0.8
Belgium	1909	28,557,359	3.8	New Zealand	1910	2,756,238	2.8
Canada	1910	22,297,186	3.1	Norway	1908	8,988,017	3.8
<b>Commonwealth</b>	<b>1910</b>	<b>9,333,146</b>	<b>2.1</b>	S. African Un.	1910	10,231,687	1.7
Denmark	1909	16,253,253	6.0	Sweden	1908	20,120,884	3.7
France	1909	56,748,130	1.5	United K'dom	1910	134,030,314	3.0
Germany	1908	44,628,268	0.7	United States	1910	61,426,748*	0.7
Italy	1908	47,795,326	1.4				

\* Exclusive of Northern Border and Lake Ports.

**3. Shipping Communication with various Countries.**—Particulars of the number and tonnage of vessels recorded between Australia and various countries, distinguishing

British from foreign countries, are given in the following tables, the table below shewing the tonnage of vessels which were recorded as having entered the Commonwealth from the particular countries mentioned; that on page 661 shews the tonnage of vessels which were recorded as having cleared the Commonwealth for the particular countries, while on page 662 is shewn the total number and tonnage of vessels recorded as entered and cleared from and to the countries named.

**SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM AND  
TO VARIOUS COUNTRIES, 1906 to 1910.**

**ENTERED.**

Country.	1906.	1907.	1908.	1909.	1910.
United Kingdom ...	997,344	1,093,866	1,146,118	1,243,115	1,377,151
Canada ...	64,506	87,686	87,682	89,990	108,727
Cape Colony ...	165,691	128,498	55,779	80,088	39,626
Fiji ...	48,760	56,861	44,016	54,462	49,493
Hong Kong ...	128,480	104,959	66,114	41,521	22,327
India and Ceylon ...	93,739	81,679	105,728	99,762	169,800
Mauritius ...	23,461	8,005	8,137	35,366	43,133
Natal ...	89,360	68,541	32,898	127,531	168,514
New Zealand ...	647,862	702,373	794,488	737,899	766,777
Papua ...	12,046	16,438	30,369	42,803	47,881
South Sea Islands ...	48,765	34,049	57,694	57,341	64,164
Straits Settlements ...	118,049	72,407	133,601	104,284	89,731
Other British Countries ...	5,261	6,935	3,370	4,310	13,588
<b>Total British Countries ...</b>	<b>2,443,324</b>	<b>2,462,297</b>	<b>2,565,994</b>	<b>2,718,472</b>	<b>2,960,912</b>
Africa, Portuguese East ...	81,389	29,350	32,180	89,506	96,966
Belgium ...	11,062	...	17,242	11,548	15,273
Chile ...	147,761	414,804	238,460	81,433	111,504
Dutch East Indies ...	63,258	20,364	27,831	78,203	72,212
France ...	76,217	101,439	81,713	113,964	99,308
Germany ...	275,676	287,850	270,135	276,021	290,834
Hawaiian Islands ...	20,787	53,584	21,138	38,011	32,020
Japan ...	180,314	189,747	185,633	136,340	153,547
Mexico ...	18,201	50,208	21,562	36,443	24,366
New Caledonia ...	64,296	64,401	57,630	63,250	62,542
Norway ...	44,894	29,000	29,417	36,094	37,201
Peru ...	25,573	75,850	47,247	50,291	27,051
Philippine Islands ...	114,897	113,904	174,042	75,977	28,550
South Sea Islands (foreign)...	15,656	19,661	30,899	30,990	37,684
Sweden ...	16,108	25,193	33,589	46,317	41,231
United States ...	332,516	411,636	354,625	290,520	338,587
Other Foreign Countries ...	74,216	122,778	106,342	187,814	178,032
<b>Total Foreign Countries...</b>	<b>1,562,821</b>	<b>2,009,769</b>	<b>1,729,685</b>	<b>1,642,722</b>	<b>1,646,908</b>
<b>Total all Countries ...</b>	<b>4,006,145</b>	<b>4,472,066</b>	<b>4,295,679</b>	<b>4,361,194</b>	<b>4,607,820</b>

## SHIPPING TONNAGE ENTERED AND CLEARED, ETC.—(Continued).

## CLEARED.

Country.	1906.	1907.	1908.	1909.	1910.
United Kingdom ...	1,024,906	1,077,830	963,548	1,239,669	1,467,925
Canada ...	36,483	43,423	51,248	53,541	50,510
Cape Colony ...	68,714	53,073	36,980	43,682	55,305
Fiji ...	54,167	67,750	66,890	49,890	53,713
Hong Kong ...	113,787	100,056	66,083	48,751	31,145
India and Ceylon ...	143,451	131,194	173,530	153,863	139,584
Mauritius ...	23,483	1,992	2,687	5,048	9,396
Natal ...	35,048	18,384	13,559	4,803	36,765
New Zealand ...	757,414	821,719	873,077	880,668	975,121
Papua ...	14,400	18,313	25,232	43,802	50,552
South Sea Islands ...	38,425	22,886	50,397	31,707	43,539
Straits Settlements ...	155,004	101,750	165,313	139,313	156,704
Other British Countries ...	...	2,322	...	...	2,924
Total British Countries	2,465,282	2,460,692	2,488,544	2,694,737	3,073,183
Africa, Portuguese East ...	14,511	25,103	8,535	19,697	18,716
Belgium ...	33,500	65,890	102,187	128,670	115,121
Chile ...	403,900	556,005	457,477	300,451	342,478
Dutch East Indies ...	34,608	24,099	59,412	61,753	105,293
France ...	66,756	85,710	81,226	63,490	113,226
Germany ...	234,325	236,617	252,881	279,526	312,128
Hawaiian Islands ...	48,097	42,245	46,009	26,253	32,520
Japan ...	54,822	56,243	110,486	90,732	102,183
Mexico ...	46,650	21,166	31,455	9,675	13,146
New Caledonia ...	80,606	59,805	67,668	72,234	47,071
Peru ...	87,641	78,664	59,530	36,568	52,243
Philippine Islands ...	155,214	151,202	178,631	124,816	106,087
South Sea Islands (foreign)	13,698	32,769	34,452	39,175	57,790
Sweden ...	1,411	...	2,530	4,084	...
United States ...	120,454	395,192	200,628	142,274	184,153
Other Foreign Countries	99,038	59,398	103,821	61,422	49,988
Total Foreign Countries	1,495,231	1,890,108	1,796,928	1,460,820	1,652,143
Total all Countries ...	3,960,513	4,350,800	4,285,472	4,155,557	4,725,326

The figures in the above table represent the tonnage of shipping recorded as having cleared the Commonwealth from the particular countries named. For the purpose of comment, however, countries have been grouped according to larger geographical divisions in Section 4.

**SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM AND  
TO VARIOUS COUNTRIES, 1906 to 1910.**

Country.	1906.	1907.	1908.	1909.	1910.
United Kingdom ... ..	2,022,250	2,171,696	2,109,666	2,482,784	2,845,076
Canada ... ..	100,989	131,109	138,930	143,531	159,237
Cape Colony ... ..	234,405	181,571	92,759	123,770	94,931
Fiji ... ..	102,927	124,611	110,906	104,352	103,206
Hong Kong ... ..	242,267	205,015	132,197	90,272	53,472
India and Ceylon ... ..	237,190	198,769	269,239	243,240	309,384
Mauritius ... ..	46,944	9,997	10,824	40,414	52,529
Natal ... ..	124,408	86,925	46,457	132,334	205,279
New Zealand ... ..	1,405,276	1,524,092	1,667,565	1,618,567	1,741,898
Papua ... ..	26,446	34,751	55,601	86,605	98,433
South Sea Islands ... ..	87,190	56,935	108,091	89,048	107,703
Straits Settlements ... ..	273,053	174,157	298,914	243,597	246,435
Other British Countries ... ..	5,261	23,361	13,389	14,695	16,512
<b>Total British Countries ... ..</b>	<b>4,908,606</b>	<b>4,922,989</b>	<b>5,054,538</b>	<b>5,413,209</b>	<b>6,034,095</b>
<b>Africa, Portuguese East ... ..</b>	<b>95,900</b>	<b>54,453</b>	<b>40,715</b>	<b>109,203</b>	<b>115,682</b>
Belgium ... ..	44,562	65,890	119,429	140,218	130,394
Chile ... ..	551,661	970,809	695,937	381,884	453,982
Dutch East Indies ... ..	97,866	44,463	87,243	139,956	177,505
France ... ..	142,973	187,149	162,939	177,454	212,534
Germany ... ..	510,001	524,467	523,016	555,547	602,962
Hawaiian Islands ... ..	68,884	95,829	67,147	64,264	64,540
Japan ... ..	235,136	245,990	296,119	227,072	255,730
Mexico ... ..	64,851	71,374	53,017	46,118	37,512
New Caledonia ... ..	144,902	124,206	125,298	135,484	109,613
Norway ... ..	44,894	29,000	29,417	38,506	37,201
Peru ... ..	113,214	154,514	106,777	86,859	79,294
Philippine Islands ... ..	270,111	265,106	352,673	200,793	134,637
South Sea Islands (foreign) ... ..	29,354	52,430	65,351	70,165	95,474
Sweden ... ..	17,519	25,193	36,119	50,401	41,231
United States ... ..	452,970	806,828	555,253	432,794	522,740
Other Foreign Countries ... ..	173,254	182,176	210,163	246,824	228,020
<b>Total Foreign Countries ... ..</b>	<b>3,058,052</b>	<b>3,899,877</b>	<b>3,526,613</b>	<b>3,103,542</b>	<b>3,209,051</b>
<b>Total all Countries ... ..</b>	<b>7,966,658</b>	<b>8,822,866</b>	<b>8,581,151</b>	<b>8,516,751</b>	<b>9,333,146</b>

In respect of these tables it may be pointed out that the statistics for any country do not fully disclose the extent of its shipping communication with particular countries. The reason of this is that vessels are recorded as arriving from, or departing to, a particular country, whereas, as a matter of fact, many regular lines of steamers call and transact business at the ports of several countries in the course of a single voyage. The lines of steamers trading between Australia and Japan, for example, often call at New Guinea, the Philippine Islands, China, etc., but, being intermediate ports, these countries are not referred to in the statistical records. Similarly in the case of the large mail steamers passing through the Suez Canal. A steamer may call at Colombo, Aden, Port Said, Genoa, Marseilles, London, Antwerp, and Bremerhaven, yet obviously can only be credited as cleared for one of these ports to the consequent exclusion of all the other ports from the records. Further reference is made in the following paragraphs to the more important of those countries with which the shipping of the Commonwealth is not fully represented in the foregoing tables.

**4. General Trend of Shipping.—(i.) General.** A grouping of countries into larger geographical divisions, as in the following tables, shews more readily the general

direction of Australian shipping, and to some extent, avoids the limitations of the records in relation to particular countries, by covering more closely the main trade routes.

It has already been shewn in the opening section of this chapter, that direct comparisons of the annual oversea shipping of the Commonwealth are possible only since the beginning of 1904.

A comparison of the total tonnage of shipping which entered and cleared the Commonwealth during 1910 with similar records for 1906 shews an increase of 1,366,488 tons, or 17.12 per cent., vessels with cargo having increased by 1,517,723 tons, or 22.92 per cent., while vessels in ballast decreased by 151,235 tons, or 19.25 per cent. By far the greater part of the increased tonnage in 1910 was employed between the Commonwealth and the United Kingdom and European ports.

(ii.) *Shipping with the United Kingdom and European Countries.* The shipping between the Commonwealth and the United Kingdom and European countries during the past five years shews that steady increase which indicates the consistent development of a well-established trade. The shipping in this direction during 1910 amounted to 3,910,465 tons, or 41.9 per cent. of the total oversea shipping of the Commonwealth, and was recorded against the several countries as follows:—United Kingdom, 2,845,076 tons (72.8 per cent.); Germany, 602,962 tons (15.4 per cent.); France, 212,534 tons (5.4 per cent.); Belgium, 130,394 tons (3.3 per cent.); other European countries, 119,499 tons (3.1 per cent.)

The foregoing figures appear to shew that while the tonnage between the Commonwealth and the United Kingdom increased by 822,826 tons, equal to an increase of 40.69 per cent., the tonnage between the Commonwealth and European continental countries has increased by 276,725 tons, or by 35.08 per cent., or in other words that 74.83 per cent. of the increase was credited to the United Kingdom and 25.17 to the latter countries. As already explained, however, no real significance can be attached to these figures, for in many instances it must be regarded as almost accidental whether tonnage be recorded against the United Kingdom or against Belgium, Germany, or France.

The failure of the statistical records to present, in all cases, the full measure of the shipping communication between particular countries is illustrated by the case of Italy. Although the mail steamers which pass through the Suez Canal call at Naples and Genoa, and during 1910 embarked or landed at those ports 3613 passengers for or from Australia, and also carried a direct trade valued at £652,512 between Italy and the Commonwealth, the records for the year shew only five vessels as passing between the two countries.

(iii.) *Shipping with New Zealand.* The tonnage of shipping between the Commonwealth and New Zealand shews a very satisfactory expansion from 1,405,276 tons in 1906 to 1,741,898 tons in 1910, an increase of 336,622 tons, or 23.95 per cent. during the four years. The shipping with New Zealand represented 18.7 per cent. of the total shipping of the Commonwealth during 1910.

(iv.) *Shipping with Asiatic Countries and Islands in the Pacific.* The total tonnage between the Commonwealth and Eastern countries during 1910 amounted to 1,795,286 tons, or 19.2 per cent. of the whole, representing a decrease of 89,702 tons, or 4.76 per cent. as compared with 1906, though it exceeded that of 1909 by 68,543 tons. The tonnage between China, Singapore, and Hong Kong collectively fell from 562,991 tons in 1906 to 301,426 tons in 1910, while Japan increased by 20,594 tons (8.76 per cent.). The tonnage recorded as to and from India and Ceylon rose from 237,190 tons in 1906 to 309,384 tons in 1910. This tonnage, of course, does not include steamers to or from the United Kingdom or other countries calling at Colombo *en route*. The tonnage recorded as to and from the Philippines shews a very rapid decline during the years 1909 and 1910, the tonnage in the latter year being less than half that in 1906. Owing to the limitation of the records, already alluded to, the figures given in the tables do not represent the full volume of the shipping between the Commonwealth and the Philippines. In addition to the shipping recorded to the Philippine Islands the

regular steam lines between the Commonwealth and Japan make Manila a regular port of call, and it is by these vessels that the general trade—apart from the coal trade—is chiefly carried. The whole of the shipping which was recorded as entering the Commonwealth during 1910 from the Philippines (28,550 tons) was in ballast, and of the 106,087 tons which was recorded as cleared for that country, 87,458 tons cleared from Newcastle with coal. The tonnage between the Commonwealth and Papua has increased rapidly, though consistently, during the past five years, in 1906 the tonnage recorded between these two countries being 26,446 tons, and 98,433 tons in 1910. There has also been a very marked expansion of the shipping to and from the Dutch East Indies during the past two years, the tonnage having increased from 97,866 in 1906 to 177,505 in 1910. The shipping with the South Sea Islands, too, was much larger in 1910 than in former years.

(v.) *Shipping with Africa.* The shipping tonnage recorded between the Commonwealth and African countries during 1910 amounted to 490,040 tons, a decrease as compared with 1906 of 37,534 tons. Much of the trade between South Africa and Australia, however, is carried by steamers calling at ports in the former country on their voyages between the Commonwealth and the United Kingdom, and which are not shewn in relation to African ports in the shipping returns. Shipping tonnage with African countries—mainly confined to Cape Colony, Natal, and Portuguese East Africa—rose from 565,759 tons in 1904, to 649,802 tons in 1905, but fell to 527,574 tons in 1906, to 350,581 tons in 1907, and to 225,798 in 1908, so that the figures for 1910 indicate a very material increase over the more recent years. An inspection of the following tables, however, shews that these figures are of no significance as an index of the transport requirements between the two countries, inasmuch as of the total tonnage passing between the two countries 353,998 tons were from Africa to Australia, with only 136,042 the other way. Moreover, of the 353,998 tons which entered the Commonwealth from Africa, 323,960 tons, or 91.5 per cent., were represented by vessels in ballast seeking freights from Australian ports.

(vi.) *Shipping with North and Central America.* The shipping of the Commonwealth with these countries during 1910 amounted to 720,359 tons (7.7 per cent. of the whole) representing an increase of 92,739 tons, or 14.8 per cent., as compared with 1906, though compared with 1907 there is a decline of 298,989 tons. The large tonnage between the Commonwealth and North America during 1907 was due to unusually heavy exports of coal to the United States. The 720,359 tons of shipping with North and Central America during 1910 were recorded against the several countries as follows:—United States, 522,740 tons (72.6 per cent.); Canada, 159,237 tons (22.1 per cent.); Mexico, 37,512 tons (5.2 per cent.); and Nicaragua, 870 tons (0.1 per cent.).

(vii.) *Shipping with South America.* The shipping between the Commonwealth and South American countries during 1910—675,098 tons—was 11 per cent. greater than in 1909, though less than in any other year since 1905. The shipping in this direction during 1910 was mainly engaged in the carriage of coal and wheat to Chile and Peru, and its decline as compared with the earlier years under review is due to the smaller export of coal. Of the total shipping tonnage between the Commonwealth and South America during 1910, 504,995 tons, or 74.8 per cent., is credited to the coal port of Newcastle, 143,683 tons having entered and 361,312 tons having cleared at that port, while of the same total 40,938 tons entered and 7554 tons cleared at the port of Sydney. Of the South American countries, Chile is responsible for 453,982 tons (67.2 per cent.); Peru, 79,294 tons (11.8 per cent.); Argentine Republic, 64,796 tons (9.6 per cent.); Uruguay, 48,281 tons (7.2 per cent.); Brazil, 24,520 tons (3.6 per cent.), and Ecuador, 4225 tons (0.6 per cent.).

An important fact, from its bearing on freight rates and its consequent possible effect on the coal trade of New South Wales with South America, is the absence of return freights from that country. Of the 261,206 tons of shipping which entered the Commonwealth from South America during 1910 only eight vessels, totalling 14,698 tons, carried cargo.

## GENERAL DIRECTION OF THE SHIPPING OF THE COMMONWEALTH, 1906 to 1910

## TONNAGE ENTERED.

Countries.	—	1906.	1907.	1908.	1909.	1910.
United Kingdom & European Countries	Cargo...	1,350,946	1,418,211	1,443,331	1,604,822	1,770,356
	Ballast	76,946	124,681	142,454	151,792	120,542
New Zealand	Cargo...	529,494	547,055	606,555	610,138	654,215
	Ballast	118,368	155,308	187,933	127,761	112,562
Asiatic Countries & Islds. in the Pacific	Cargo...	479,032	485,703	554,319	620,599	706,226
	Ballast	466,893	381,509	413,089	215,111	156,165
Africa	Cargo...	33,348	22,830	13,506	27,676	30,038
	Ballast	341,761	220,908	133,898	336,605	323,960
North and Central America	Cargo...	372,306	351,223	418,775	350,074	429,021
	Ballast	42,917	200,497	45,094	66,879	43,529
South America	Cargo...	2,154	3,754	9,565	6,189	14,698
	Ballast	191,980	560,487	327,160	243,548	246,508
	Cargo...	2,767,280	2,828,786	3,046,051	3,219,498	3,604,554
	Ballast	1,238,865	1,643,280	1,249,628	1,141,686	1,003,266
Total	...	4,006,145	4,472,066	4,295,679	4,361,194	4,607,820

## TONNAGE CLEARED.

United Kingdom & European Countries	Cargo...	1,382,948	1,479,952	1,414,973	1,732,264	2,019,567
	Ballast	74	6,188	5,195	—	—
New Zealand	Cargo...	712,153	742,257	814,667	807,791	920,930
	Ballast	45,261	79,462	58,410	72,877	54,182
Asiatic Countries & Islds. in the Pacific	Cargo...	906,065	794,069	999,148	841,078	856,486
	Ballast	32,998	23,946	66,934	49,955	76,409
Africa	Cargo...	152,465	106,843	75,559	89,650	136,042
	Ballast	—	—	2,835	152	—
North and Central America	Cargo...	192,590	392,118	212,355	144,491	194,697
	Ballast	19,807	75,600	76,902	60,999	53,112
South America	Cargo...	508,972	639,544	545,225	348,304	407,911
	Ballast	7,180	10,821	13,269	17,996	5,981
	Cargo...	3,855,193	4,154,783	4,061,927	3,953,578	4,535,642
	Ballast	105,320	196,017	223,545	201,979	189,684
Total	...	3,960,513	4,350,800	4,285,472	4,155,557	4,725,326

## TONNAGE ENTERED AND CLEARED.

Countries.	1906.	1907.	1908.	1909.	1910.	1910 Compared with 1906.
United Kingdom & European Countries	2,810,914	3,029,032	3,005,953	3,488,878	3,910,465	+ 1,099,551
New Zealand	1,405,276	1,524,092	1,667,565	1,618,567	1,741,898	+ 336,622
Asiatic Countries and Islands in the Pacific	1,884,988	1,685,227	2,033,490	1,726,743	1,795,286	— 89,702
Africa	527,574	350,581	225,798	451,083	490,040	— 37,534
North and Central America	627,620	1,019,348	753,126	622,443	720,359	+ 92,739
South America	710,286	1,214,586	895,219	606,037	675,098	— 35,188
Cargo	6,622,473	6,983,569	7,107,978	7,173,076	8,140,196	+ 1,517,723
Ballast	1,344,185	1,839,297	1,473,173	1,343,675	1,192,950	— 151,235
Total	7,966,658	8,822,866	8,581,151	8,516,751	9,333,146	+ 1,366,488

5. **Nationality of Oversea Shipping.**—As will be seen from the following table, the greater part of the shipping visiting the Commonwealth is of British nationality. During 1910 British shipping represented 74.89 per cent. of the total tonnage which entered and cleared the Commonwealth.

**NATIONALITY OF ALL VESSELS WHICH ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO OVERSEA COUNTRIES, 1906 to 1910.**

Nationality.	Tonnage.				
	1906.	1907.	1908.	1909.	1910.
<b>BRITISH—</b>					
Australian ... ..	642,422	624,658	657,833	720,183	742,772
United Kingdom... ..	4,341,502	4,944,495	4,715,393	4,470,679	5,252,308
New Zealand ... ..	800,402	817,389	926,669	988,006	968,551
Other British ... ..	18,626	13,842	18,726	10,628	26,223
Cargo ... ..	4,929,499	5,250,818	5,437,831	5,426,643	6,295,935
Ballast ... ..	873,453	1,149,566	880,790	762,853	693,919
Total British ... ..	5,802,952	6,400,384	6,318,621	6,189,496	6,989,854
Per cent. to total ... ..	72.84	72.54	73.63	72.67	74.89
<b>FOREIGN—</b>					
Austrian ... ..	9,982	6,121	4,341	—	30,059
Danish ... ..	11,758	15,656	11,869	8,848	4,010
Dutch ... ..	20,392	29,118	56,162	132,954	153,255
French ... ..	475,839	561,151	521,235	559,383	457,676
German ... ..	836,793	851,237	910,289	845,758	868,263
Italian ... ..	81,195	130,569	88,364	86,521	93,978
Japanese ... ..	61,054	78,157	82,209	79,120	89,358
Norwegian ... ..	366,978	479,932	463,705	440,727	482,637
Russian ... ..	55,138	50,721	39,999	46,041	33,145
Swedish ... ..	31,085	35,141	35,117	49,587	51,601
United States ... ..	208,228	173,588	106,888	56,148	48,477
Other Foreign ... ..	5,264	11,091	42,352	22,168	30,833
Cargo ... ..	1,692,974	1,732,751	1,670,147	1,746,433	1,844,261
Ballast ... ..	470,732	689,731	592,383	580,822	499,031
Total Foreign ... ..	2,163,706	2,422,482	2,262,530	2,327,255	2,343,292
Per cent. to total ... ..	27.16	27.46	26.37	27.33	25.11
Cargo ... ..	6,622,473	6,983,569	7,107,978	7,173,076	8,140,196
Per cent. to total... ..	83.12	79.15	82.83	84.22	87.22
Ballast ... ..	1,344,185	1,839,297	1,473,173	1,343,675	1,192,950
Per cent. to total... ..	16.88	20.85	17.17	15.78	12.78
Grand Total ... ..	7,966,658	8,822,866	8,581,151	8,516,751	9,333,146



The tonnage of Australian-owned vessels engaged in the oversea trade represents 7.96 per cent. of the total, and the tonnage of New Zealand vessels 10.38 per cent. Both are engaged mainly in the trade with New Zealand and eastern countries. An examination of the figures in the above table shews that, of the increase in tonnage in 1910 as compared with 1906, viz., 1,366,488 tons, 1,186,902 tons (*i.e.*, 86.86 per cent.) were British and 179,586 tons (*i.e.*, 13.14 per cent.) were foreign, or, in other words, the British tonnage in 1910 shewed an increase of 20.4 per cent. over 1906, while that of foreign countries only increased by 8.3 per cent. The proportion of British tonnage in the shipping of the Commonwealth was higher in 1910 than in any year since 1904.

If, however, the tonnage of ships carrying cargo only is considered as indicating more closely the proportion of the actual carrying trade done than does the total tonnage, the position of British shipping shews even a greater improvement, inasmuch as the British tonnage carrying cargo to and from the Commonwealth during 1910 shews an increase over 1906 equal to 27.72 per cent., while the foreign tonnage with cargo increased by 8.92 per cent. Thus the British proportion of tonnage carrying cargo has increased from 74.42 per cent. to 77.34 per cent. The relative proportion of British and foreign tonnage which entered and cleared the Commonwealth with cargo during the past five years was as follows:—

**PROPORTION OF TONNAGE OF BRITISH AND FOREIGN NATIONALITY ENTERED  
AND CLEARED THE COMMONWEALTH WITH CARGO, 1906 to 1910.**

Nationality.				1906.	1907.	1908.	1909.	1910.
British	...	...	...	74.42	75.19	76.50	75.65	77.34
Foreign	...	...	...	25.58	24.81	23.50	24.35	22.66
Total	....	...	...	100.00	100.00	100.00	100.00	100.00

That the proportion of foreign tonnage should increase is to be expected as the natural corollary of the extension of the trade of the Commonwealth with foreign countries. This is particularly patent in regard to Germany and France. Both of these countries desire to increase their mercantile marine, and it is therefore natural that the increased direct trade between themselves and Australia should be carried by their own vessels rather than by the vessels of a third country. Recently, too, the Royal Dutch Packet Company has established a line of steamers between Java and other islands of the East Indies and Australia. The Hungarian Levant Steamship Company has also inaugurated a cargo service between the Commonwealth and Adriatic ports.

The more important competitors for the Australian shipping trade among the foreign nations are Germany, France, and Norway, and it is therefore of interest to consider the general direction of their activity. It is well to bear in mind, when comparing the figures in the table on the next page, that the French shipping from and to France and to New Caledonia is practically identical with the steamers of the Messageries Maritimes, which maintain a regular service between France and New Caledonia *via* Australian ports, and that the German shipping from and to Germany consists mainly of the vessels of two lines, the Norddeutscher Lloyd, and the German-Australian Steamship Company, which have had regular and frequent services to Australian ports for the past twenty-seven years.

# SHIPPING OF PRINCIPAL FOREIGN NATIONS BETWEEN AUSTRALIA AND OTHER COUNTRIES DURING 1910.

Countries.	Nationality.					
	French.		German.		Norwegian.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
EUROPEAN COUNTRIES—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom ... ..	24,116	36,310	1,775	27,153	4,717	91,784
Belgium ... ..	3,864	...	5,406	17,576	1,543	...
France ... ..	86,056	45,291	...	...	2,756	...
Germany ... ..	1,938	...	274,692	286,393	1,962	...
Norway ... ..	...	...	6,905	...	15,989	...
Sweden ... ..	...	...	14,038	...	5,818	...
Other European Countries ...	8,049	3,074	2,190	...	4,246	1,615
NEW ZEALAND ... ..	3,912	...	760	...	7,239	7,589
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—						
Japan ... ..	...	...	23,644	21,693	2,340	...
New Caledonia ... ..	56,985	47,071	...	...	...	...
Philippine Islands ... ..	3,520	...	...	2,435	4,170	13,016
South Sea Islands ... ..	5,939	9,948	1,078	2,313	18,665	13,290
Straits Settlements ... ..	...	...	...	18,027	...	...
Other Asiatic Countries ... ..	...	3,520	9,955	6,071	18,005	14,120
AFRICAN COUNTRIES—						
Africa, Portuguese East ... ..	7,542	...	3,387	...	15,383	...
Cape Colony ... ..	...	...	6,497	1,391	17,414	8,018
Natal ... ..	3,082	...	1,140	...	3,959	2,984
Other African Countries ... ..	...	...	...	...	3,479	2,308
NTH. AMERICAN COUNTRIES—						
United States ... ..	22,932	71,595	33,949	5,270	21,429	13,882
Other Nth. Amer. Countries... ..	1,726	...	2,882	...	8,982	...
STH. AMERICAN COUNTRIES—						
Chile ... ..	...	5,894	13,587	54,669	8,195	47,523
Peru ... ..	3,923	...	3,848	1,335	11,496	17,706
Other Sth. Amer. Countries ...	1,389	...	18,204	...	64,786	6,229
With Cargo ... ..	128,438	160,346	362,215	433,860	96,574	234,597
In Ballast ... ..	106,535	62,357	61,722	10,466	145,999	5,467
Total ... ..	234,973	222,703	423,937	444,326	242,573	240,064

A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality, which entered and cleared the Commonwealth during the years 1906-10. Steam tonnage during 1910 was 1,939,024 tons greater than in 1906, 1,688,874 tons (*i.e.*, 87.10 per cent.) of the increase being British, and 250,150 tons (*i.e.*, 12.90 per cent.) being foreign. The tonnage of sailing vessels shows a decrease during the same period of 572,536 tons, British tonnage having fallen by 501,972 tons, and that of foreign nations by 70,564 tons.

As might be expected, the proportion of sailing vessels engaged in carrying the trade of the Commonwealth is shewn to be rapidly decreasing, having fallen during the period under review from 26 per cent. to 16 per cent. of the total tonnage, and it is in this branch of shipping that the foreign element is stronger than the British.

## STEAM AND SAILING VESSELS ENTERED AND CLEARED, 1906 to 1910.

Description and Nationality of Vessels.	1906.		1907.		1908.		1909.		1910.	
	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.
Steam—										
British	4,743,416	80	5,290,986	82	5,723,288	82	5,583,448	81	6,432,290	82
Foreign	1,186,767	20	1,162,413	18	1,259,714	18	1,325,523	19	1,436,917	18
Total steam	5,930,183	100 (74)	6,453,399	100 (73)	6,983,002	100 (81)	6,908,971	100 (81)	7,869,207	100 (84)
Sailing—										
British	1,059,536	52	1,109,398	47	595,333	37	606,048	38	557,564	38
Foreign	976,939	48	1,260,069	53	1,002,816	63	1,001,732	62	906,375	62
Total sailing	2,036,475	100 (26)	2,369,467	100 (27)	1,598,149	100 (19)	1,607,780	100 (19)	1,463,939	100 (16)
Steam and Sailing—										
British	5,802,952	73	6,400,384	73	6,318,621	74	6,189,496	73	6,989,854	75
Foreign	2,163,706	27	2,422,482	27	2,262,530	26	2,327,255	27	2,343,292	25
Total	7,966,658	100	8,822,866	100	8,581,151	100	8,516,751	100	9,333,146	100

**6. Tonnage in Ballast.**—The following table shows the tonnage of oversea vessels which entered and cleared the Commonwealth in ballast during the years 1906-10. Of the total British tonnage which entered during 1910, 17.52 per cent. was in ballast, and of foreign tonnage 34.38 per cent. was in similar condition. Of the total tonnage which entered the Commonwealth during 1910, 21.77 per cent. was in ballast, while of the tonnage cleared 4.01 per cent. only was without cargo.

## TONNAGE ENTERED AND CLEARED IN BALLAST, 1906 to 1910.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1906 ...	808,190	430,675	1,238,865	65,263	40,057	105,320
1907 ...	1,043,383	599,897	1,643,280	106,183	89,834	196,017
1908 ...	794,745	454,883	1,249,628	86,045	137,500	223,545
1909 ...	667,478	474,218	1,141,696	95,375	106,604	201,979
1910 ...	603,511	399,755	1,003,266	90,408	99,276	189,684

## PROPORTION OF TOTAL BRITISH AND FOREIGN TONNAGE WHICH ENTERED AND CLEARED IN BALLAST, 1906 to 1910.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
1906 ...	27.28	39.88	30.92	2.30	3.70	2.66
1907 ...	32.23	48.60	36.75	3.36	7.56	4.51
1908 ...	25.05	40.51	29.09	2.74	12.07	5.22
1909 ...	21.06	39.80	26.18	3.16	9.39	4.86
1910 ...	17.52	34.38	21.77	2.55	8.41	4.01

Vessels in search of freights arrive in Australia from all parts of the world. The tonnage which entered each State of the Commonwealth, in ballast, during 1910, was as follows:—

**TONNAGE OF OVERSEA VESSELS IN BALLAST WHICH ENTERED EACH STATE OF  
THE COMMONWEALTH DURING THE YEAR 1910.**

State ... ..	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Tonnage ... ..	495,532	34,111	13,104	252,027	138,238	70,254	1,003,266
Percentage of total ...	49.39	3.40	1.31	25.12	13.78	7.00	100

The large exports of coal from New South Wales afford special inducements to vessels in search of freights. During 1910, 495,532 tons, or 49.4 per cent. of all ballast tonnage arriving in Australia, entered in New South Wales, 368,496 tons having entered at the coal port of Newcastle. The proportion of ballast tonnage entering Newcastle during 1910 was much lower than usual in consequence of the smaller exports of coal. The demand for carriage of the large shipments of wheat and wool, however, was sufficient to prevent any material diminution of the large aggregate ballast tonnage to the Commonwealth. The relatively large tonnage in ballast recorded in Tasmania is mainly due to French vessels—sailing under the bounty system—calling at Hobart for orders.

### § 3. Shipping of Ports.

1. **Shipping of Ports.**—Appended is an abstract of the total shipping tonnage—over-sea and coastwise—which entered the more important ports of Australia during the year 1910, together with similar information in regard to some of the ports of New Zealand and of the United Kingdom for the same year:—

**SHIPPING OF PORTS, AUSTRALIA AND VARIOUS COUNTRIES, 1910.**

Port.	Tonnage Entered.	Port.	Tonnage Entered.
<b>AUSTRALIA—</b>		<b>ENGLAND AND WALES—</b>	
Sydney ... ..	7,137,308	London ... ..	19,737,350
Melbourne ... ..	5,314,455	Liverpool (inc. Birkenhead)	14,313,514
Newcastle ... ..	3,270,700	Cardiff ... ..	11,054,916
Port Adelaide ... ..	2,866,953*	Tyne ports ... ..	10,823,992
Brisbane ... ..	2,368,047	Southampton ... ..	6,553,206
Fremantle ... ..	1,980,138	Hull ... ..	5,514,657
Townsville ... ..	1,186,907	Plymouth ... ..	4,297,496
Albany ... ..	1,055,746	Newport ... ..	3,129,714
Hobart ... ..	809,846	Middlesbrough ... ..	3,077,604
Rockhampton ... ..	790,419	Sunderland ... ..	2,793,671
Mackay ... ..	742,324	Swansea ... ..	2,774,547
Cairns ... ..	607,402	Manchester ... ..	2,405,667
Port Pirie ... ..	552,619	Blyth ... ..	2,193,885
Bowen ... ..	516,456	Dover ... ..	2,011,405
Geelong ... ..	463,294	Grimsby ... ..	1,722,564
Bunbury ... ..	347,625	<b>SCOTLAND—</b>	
Thursday Island ... ..	343,368	Glasgow ... ..	5,633,392
<b>NEW ZEALAND—</b>		Leith ... ..	2,414,314
Wellington ... ..	2,947,156	<b>IRELAND—</b>	
Lyttelton ... ..	2,155,359	Cork (inc. Queenstown) ...	4,101,330
Auckland ... ..	1,583,716	Belfast ... ..	3,140,326
Dunedin ... ..	1,031,644	Dublin ... ..	2,672,122

\* Exclusive of coastal shipping—particulars of which are not available.

From the figures above it may be seen that the shipping business of the port of Sydney is only exceeded by that of four ports in the United Kingdom, viz., London, Liverpool, the Tyne, and Cardiff.

### § 4. Vessels Built and Registered.

1. **Vessels Registered.**—The number and net tonnage of steam and sailing vessels on the registers at the various ports of the Commonwealth at the end of each of the years 1901 to 1910 are as follows:—

#### VESSELS ON THE REGISTER, 1901 to 1910.

Year.	Steam.		Sailing.		Total.	
	Number.	Net Tonnage.	Number.	Net Tonnage.	Number.	Net Tonnage.
1901 ...	943	203,541	1,433	141,722	2,376	345,263
1902 ...	965	208,043	1,488	141,125	2,448	349,168
1903 ...	1,004	219,985	1,578	136,888	2,582	356,873
1904* ...	1,011	223,558	1,700	129,801	2,711	353,359
1905 ...	1,052	222,551	1,690	129,291	2,742	351,842
1906 ...	1,082	238,742	1,644	128,288	2,726	367,030
1907 ...	1,108	249,600	1,555	126,402	2,663	376,002
1908 ...	1,148	255,249	1,571	129,392	2,719	384,641
1909 ...	1,196	274,551	1,535	129,540	2,731	404,091
1910 ...	1,224	284,104	1,548	128,319	2,772	412,423

\* Prior to 1904 vessels registered in the Northern Territory were not included

2. **Vessels Built.**—The following tables shew the number and tonnage of vessels built in the Commonwealth during each of the years 1901-1910, so far as such information can be ascertained from the Shipping Registers of the various States. The Merchant Shipping Act, under which vessels are registered in Australia, however, does not make it compulsory to register vessels under 15 tons burthen if engaged in river or coastal trade. Larger vessels are also exempt from registration if not engaged in trade. Yachts and small trading vessels may be, and frequently are, registered at the request of the owners. As the Shipping Registers have been, and are, the source of information, it follows that the figures given below will be subject to additions in the future, inasmuch as vessels already built may be added to the register at some future date.

#### VESSELS BUILT IN THE COMMONWEALTH.

##### NUMBER.

Year.	Steamers Built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Composite.	Total.				
1901 ...	18	1	1	...	20	4	37	...	61
1902 ...	26	...	...	1	27	8	72	1	108
1903 ...	15	...	2	...	17	17	147	2	183
1904 ...	14	...	1	1	16	11	73	...	100
1905 ...	15	...	4	...	19	22	15	2	58
1906 ...	12	1	1	...	14	21	17	3	55
1907 ...	16	...	...	1	17	10	30	1	58
1908 ...	12	...	2	...	14	17	15	1	47
1909 ...	10	...	...	...	10	11	29	1	51
1910 ...	8	1	2	...	11	6	24	...	41

## VESSELS BUILT IN THE COMMONWEALTH—Continued.

## TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1901 ...	2,270	1,251	41	33	1,052	927	...	...	8,363	2,211
1902 ...	2,827	1,627	96	82	2,374	2,052	64	64	5,361	3,825
1903 ...	1,569	956	624	455	3,033	2,585	385	350	5,611	4,346
1904 ...	2,094	1,240	134	100	1,591	1,375	...	...	3,819	2,715
1905 ...	2,444	1,462	291	214	328	280	967	896	4,030	2,852
1906 ...	1,426	735	201	141	466	397	546	536	2,639	1,809
1907 ...	2,288	1,251	89	79	734	683	152	145	3,263	2,158
1908 ...	2,144	1,226	261	196	461	387	179	179	3,045	1,988
1909 ...	1,351	735	180	148	692	579	98	98	2,321	1,560
1910 ...	1,517	873	84	75	482	409	...	...	2,083	1,357

## § 5. Interstate Shipping.

1. **Total Vessels and Tonnage.**—In the following table are shown the number and tonnage of vessels recorded as having entered each State of the Commonwealth from any other State therein, and similarly the number and tonnage clearing from each State to other Commonwealth States. The table gives results for the quinquennial intervals since 1886. The shipping on the Murray River, between the States of New South Wales, Victoria and South Australia, is not included.

## INTERSTATE SHIPPING, 1886 to 1910.—NUMBER OF VESSELS.

## ENTERED.

State.	1886.	1891.	1896.	1901.	1906.	1910.
New South Wales ...	1,603	1,692	1,470	1,611	1,575	1,745
Victoria ...	1,433	1,525	1,280	1,502	1,561	1,631
Queensland ...	615	376	439	430	478	535
South Australia and Northern Territory ...	550	611	823	650	752	764
Western Australia ...	187	149	520	446	335	334
Tasmania ...	576	680	567	713	840	853
Total ...	4,964	5,033	5,099	5,352	5,541	5,912

## CLEARED.

	1886.	1891.	1896.	1901.	1906.	1910.
New South Wales ...	1,402	1,415	1,275	1,473	1,417	1,668
Victoria ...	1,615	1,733	1,380	1,569	1,610	1,756
Queensland ...	712	389	455	395	431	522
South Australia and N. Territory ...	620	716	918	756	802	836
Western Australia ...	156	158	496	456	363	361
Tasmania ...	615	679	573	694	809	825
Total ...	5,120	5,090	5,097	5,343	5,432	5,968

## NUMBER OF VESSELS—Continued.

## TOTAL.

State.	1886.	1891.	1896.	1901.	1906.	1910.
New South Wales ... ..	3,005	3,107	2,745	3,084	2,992	3,413
Victoria ... ..	3,048	3,258	2,660	3,071	3,171	3,387
Queensland ... ..	1,327	765	894	825	909	1,057
South Australia and N. Territory	1,170	1,327	1,741	1,406	1,554	1,600
Western Australia ... ..	343	307	1,016	902	698	745
Tasmania ... ..	1,191	1,359	1,140	1,407	1,649	1,678
Total ... ..	10,084	10,123	10,196	10,695	10,973	11,880

## TONNAGE.—ENTERED.

State.	1886.	1891.	1896.	1901.	1906.	1910.
New South Wales	1,181,495	1,617,559	1,589,753	2,031,089	2,456,269	3,252,300
Victoria ... ..	1,072,381	1,392,818	1,486,624	1,956,900	2,473,771	2,882,082
Queensland ... ..	355,930	267,753	343,026	545,469	692,354	858,744
S. Aust. and N. Ter.	437,502	658,600	1,051,893	1,124,499	1,532,802	1,895,027
Western Australia	127,098	237,708	683,918	973,474	968,664	1,269,589
Tasmania ... ..	221,061	371,205	281,029	485,023	721,240	816,910
Total ... ..	3,395,467	4,545,643	5,436,243	7,116,454	8,895,100	10,974,652

## CLEARED.

New South Wales	1,014,900	1,314,339	1,341,635	1,856,501	2,177,496	3,023,601
Victoria ... ..	1,257,967	1,692,189	1,599,065	2,038,424	2,617,966	3,154,416
Queensland ... ..	411,275	302,723	359,046	440,659	578,561	825,592
S. Aust. and N. Ter.	485,368	829,616	1,203,830	1,365,668	1,772,356	2,200,652
Western Australia	116,101	269,256	687,632	977,846	1,051,629	1,198,508
Tasmania ... ..	251,620	352,406	250,557	433,735	636,944	701,419
Total ... ..	3,537,231	4,760,529	5,441,765	7,112,833	8,834,952	11,104,188

## TOTAL.

New South Wales	2,196,395	2,931,898	2,931,388	3,887,590	4,633,765	6,275,901
Victoria ... ..	2,330,348	3,085,007	3,085,689	3,995,324	5,091,737	6,036,498
Queensland ... ..	767,205	570,476	702,072	986,128	1,270,915	1,684,336
S. Aust. and N. Ter.	922,870	1,488,216	2,255,723	2,490,167	3,355,158	4,095,679
Western Australia	243,199	506,964	1,371,550	1,951,320	2,020,293	2,468,097
Tasmania ... ..	472,681	723,611	531,586	918,758	1,358,184	1,518,329
Total ... ..	6,932,698	9,306,172	10,878,008	14,229,287	17,730,052	22,078,840

The figures presented in the above table include oversea vessels—largely mail boats—passing from one State to another. This renders the results somewhat unsatisfactory.

In the earlier part of this section attention was drawn to the custom in vogue prior to Federation of recording vessels from or to "oversea countries via other Commonwealth States" as *direct* from or to the oversea country. At each port in Australia these vessels were, on the inward voyage (to Australia), entered as from the oversea country, and cleared to the next Australian port as "interstate"; on the return journey—the outward voyage—they were entered as "interstate," and cleared as for the oversea country. In order to preserve the continuity of the records of the shipping communication of the several States with oversea countries this method has been followed in continuation of the pre-existing practice, excepting that vessels arriving or departing via other Commonwealth States are now so recorded instead of as "direct."

From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1910, including the total interstate movements of oversea vessels, the figures in the following table must be added to those of the preceding one :—

**SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA  
OTHER COMMONWEALTH STATES, 1910.**

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ...	477	1,655,485	460	1,626,366	937	3,281,851
Victoria ...	419	1,462,299	386	1,377,232	805	2,839,531
Queensland ...	179	655,674	190	708,632	369	1,364,306
South Australia ...	206	924,177	187	703,169	393	1,527,346
Western Australia ...	10	28,404	20	51,979	30	80,383
Tasmania ...	3	6,583	24	123,166	27	129,749
Total ...	(1910) 1,294	4,632,622	1,267	4,590,544	2,561	9,223,166
	(1906) 1,045	3,849,036	1,107	3,442,747	2,152	6,791,783

**2. Total Interstate Movement of Shipping.**—From the foregoing it has been seen that the interstate movement of shipping includes two very different elements, viz.:—(i.) Oversea ships moving from State to State, and (ii.) the movement of ships engage solely in the interstate carrying trade. These two elements are approximately follows:—

**TOTAL INTERSTATE MOVEMENT OF SHIPPING, 1906 to 1910.**

	1906.	1907.	1908.	1909.	1910.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate ...	5,452,353	5,582,571	5,961,617	5,850,749	6,384,108
Vessels solely interstate	6,791,783	7,514,089	8,258,018	8,204,858	9,223,166
Total ...	12,244,136	13,096,660	14,219,635	14,055,607	15,607,274

The necessary data are not available to enable a similar analysis to be made prior to 1906.



The following table shews the number and tonnage of vessels which entered and cleared each State during 1910; including the coastal movements of oversea vessels :—

### INTERSTATE SHIPPING OF EACH STATE, 1910.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	2,222	4,907,785	2,128	4,649,967	4,350	9,557,752
Victoria	2,050	4,344,381	2,142	4,531,648	4,192	8,876,029
Queensland	714	1,514,418	712	1,534,224	1,426	3,048,642
South Australia	970	2,719,204	1,023	2,903,821	1,993	5,623,025
Western Australia	394	1,297,993	381	1,250,487	775	2,548,480
Tasmania	856	823,493	849	824,585	1,705	1,648,078
Total...	1910	7,206	15,607,274	7,235	15,694,732	...
	1906	6,586	12,244,136	6,539	12,277,699	...

3. **Vessels Engaged Solely in Interstate Trade.**—The elimination of the element of oversea vessels, included in the interstate shipping returns, cannot be accurately effected; nevertheless a close approximation is furnished if it be assumed that vessels *entered* in the several States as from “oversea countries via other Commonwealth States” have really been *cleared* from other States as “interstate,” and further, that the vessels *cleared* to “oversea countries via other Commonwealth States” have likewise been *entered* elsewhere as “interstate.” Applying this suggestion, and so eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade during the years 1906 to 1910 will be found to be as follows:—

### NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1906-1910.

Year	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1906	4,434	5,452,353	4,387	5,485,916
1907	4,614	5,582,571	4,566	5,580,963
1908	4,706	5,961,617	4,654	5,916,339
1909	4,375	5,850,749	4,353	5,854,313
1910	4,645	6,384,108	4,674	6,471,566

This treatment cannot be extended to the individual States, as the records do not disclose the particular relationship of the States concerned.

4. **Interstate and Coastal Services.**—The foundation of the coastal steamship services in Australia dates back to the year 1851, when a regular trade was established between Melbourne and Geelong by the small screw steamer “Express.” Early in the fifties a company was formed in Tasmania with a capital of £40,000 for the purpose of purchasing steamboats, and employing them in the carriage of passengers and goods between Hobart and Melbourne. This service was commenced in 1852, and was thus the first regular interstate service in Australia. About this time the great influx of population and the increase

in commerce, caused chiefly by the gold discoveries, emphasised the desirability of establishing more regular and quicker means of communication between the principal ports of Australia, and in 1862 the regular interstate service between New South Wales and Victoria was inaugurated by the s.s. *You Yangs*, which was put into commission in regular service between Melbourne, Sydney, and Newcastle. In 1875 a company was formed in Adelaide for the purpose of supplying suitable steamers for the requirements of the trade between Adelaide and Melbourne. The first two steamers of the company were named the *South Australian* and the *Victorian*, and were small vessels of only 400 tons burthen. From the start success attended these enterprises, and the services thus initiated were rapidly extended and their operations broadened. Numerous other companies were formed to cope with the increasing trade between ports in the Commonwealth, and the companies engaged from time to time added to their fleets of steamers by the acquisition of more modern and rapid vessels, until at the end of the year 1910 the total net tonnage owned by the twenty-four companies from whom returns have been received amounted to 172,410 tons. A summary of the various mail services carried on during the year 1910 is given in Section XVIII. of this work.

The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each of the years 1901 and 1906 to 1910. The figures for 1906 and subsequent years include particulars relating to a number of smaller companies which did not supply returns for 1901, though they were, for the most part, carrying on business in that year.

**PARTICULARS OF STEAMSHIPS ENGAGED IN REGULAR INTERSTATE AND COASTAL SERVICES IN THE COMMONWEALTH, 1901 to 1910.**

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.
Number of companies making returns ...	11	*22	22	23	23	24
Number of steamships ...	113	153	163	175	181	180
Tonnage { Gross ...	184,574	221,905	239,548	261,862	283,276	291,470
Net ...	114,080	133,697	146,143	156,502	168,206	172,410
Horse-power { Nominal ...	18,237	22,573	24,151	25,582	28,477	29,128
Indicated ...	123,519	162,659	176,485	192,140	238,610	245,696
Number of passengers { 1st class ...	4,617	6,191	6,558	7,100	7,087	7,041
for which licensed to { 2nd class ...						
steerage ...	4,490	5,911	6,041	6,156	6,460	6,395
carry ...	403	506	535	575	598	600
Complement { Masters and officers ...	332	407	437	471	495	499
of Crew { Engineers ...	2,875	3,657	3,949	4,121	4,347	4,440
Crew ...						

\* See letterpress above.

5. **Lighthouses and Lights on the Coast of the Commonwealth.**—See Year Book No. 2.

6. **Ports of the Commonwealth.**—See Year Book No. 3.

## § 6. Shipwrecks.

The following statement shews the number and tonnage of vessels wrecked, or otherwise lost, on the coast of the Commonwealth, or under the jurisdiction of the several States, during the years 1901 to 1910 :—

## NUMBER AND TONNAGE OF VESSELS WRECKED,\* 1901 to 1910.

Year.	Class of Vessel.	Number and Tonnage of Vessels.										Lives Lost.	Passengers and Crew.
		Under 50 tons.		50 to 500 tons.		500 to 2000 tons.		Over 2000 tons.		Total.			
		No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.		
1901	Steam ...	7	189	5	949	2	2,811	...	...	14	3,949	40	250
	Sailing ...	11	217	6	785	5	5,800	...	...	22	6,802	10	172
	Total ...	18	406	11	1,734	7	8,611	...	...	36	10,751	50	422
1902	Steam ...	2	83	1	340	4	3,173	...	...	7	3,596	25	157
	Sailing ...	12	221	4	369	3	3,142	1	2,103	20	5,835	4	161
	Total ...	14	304	5	709	7	6,315	1	2,103	27	9,431	29	318
1903	Steam ...	2	61	5	1,753	2	2,377	...	...	9	4,191	11	200
	Sailing ...	18	306	4	551	2	1,924	...	...	24	2,781	10	217
	Total ...	20	367	9	2,304	4	4,301	...	...	33	6,972	21	417
1904	Steam ...	1	35	2	204	1	886	1	3,702	5	4,827	31	363
	Sailing ...	14	238	6	765	5	4,646	1	2,413	26	8,062	59	227
	Total ...	15	273	8	969	6	5,532	2	6,115	31	12,889	90	590
1905	Steam ...	3	49	2	594	...	...	1	3,325	6	3,968	...	417
	Sailing ...	10	160	5	775	3	3,678	1	2,176	19	6,789	57	160
	Total ...	13	209	7	1,369	3	3,678	2	5,501	25	10,757	57	577
1906	Steam ...	4	89	2	154	...	...	1	2,415	7	2,658	12	60
	Sailing ...	5	77	3	276	1	1,725	2	5,022	11	7,100	1	105
	Total ...	9	166	5	430	1	1,725	3	7,437	18	9,758	13	165
1907	Steam ...	3	71	4	916	3	3,572	...	...	10	4,559	16	204
	Sailing ...	8	162	6	421	5	6,895	...	...	19	7,478	29	170
	Total ...	11	233	10	1,337	8	10,467	...	...	29	12,037	45	374
1908	Steam ...	6	137	7	816	2	2,930	2	5,585	17	9,468	37	299
	Sailing ...	56	775	3	276	3	4,074	1	2,062	63	7,187	219	348
	Total ...	62	912	10	1,092	5	7,004	3	7,647	80†	16,655	256	647
1909	Steam ...	1	48	3	359	1	1,382	1	2,286	6	4,075	40	131
	Sailing ...	6	163	3	362	2	2,681	...	...	11	3,206	6	88
	Total ...	7	211	6	721	3	4,063	1	2,286	17	7,281	46	219
1910	Steam ...	1	34	5	941	1	958	2	9,307	9	11,240	624	2
	Sailing ...	5	115	2	205	2	3,095	...	...	9	3,415	94	20
	Total ...	6	149	7	1,146	3	4,053	2	9,307	18	14,655	718	22

\* In some cases the vessels included in the above return were subsequently recovered. † The large number of wrecks during 1908 was due to cyclones on the north-west coast of Western Australia destroying a large number of the pearling vessels.

## § 7. Wages of Employees on Coastal Vessels.

1.—Rates of Wages of Employees on Vessels engaged in the Coastal Trade of the Commonwealth.—By virtue of Judgments delivered by the President of the Commonwealth Court of Conciliation and Arbitration the minimum rates of wages to be paid per calendar month to persons employed at sea on board vessels engaged in the interstate trade, and on vessels trading within the limits of some one State of the Commonwealth, have been fixed as under:—

### MONTHLY WAGES.—MASTERS AND NAVIGATING OFFICERS.

(By Judgment delivered 25th April, 1912.)

Gross Registered Tonnage.				Master.	Chief Officer.	Second Officer.	Third Officer.	Fourth Officer.	Fifth Officer.
PASSENGER VESSELS—INTERSTATE.									
				£	£	£	£	£	£
250 tons and under	...	...	...	21	15	12	...	...	...
Over 250 and not over 500 tons	...	...	...	23	16	13	...	...	...
" 500 " " 1,000 tons	...	...	...	25	16	13	11	10	10
" 1,000 " " 2,000 tons	...	...	...	28	17	14	12	10	10
" 2,000 " " 3,000 tons	...	...	...	32	18	15	12	10	10
" 3,000 " " 4,000 tons	...	...	...	37	19	16	13	10	10
" 4,000 tons ...	...	...	...	43	20	17	14	10	10
CARGO VESSELS—INTERSTATE.									
250 tons and under	...	...	...	20	14	12	...	...	...
Over 250 and not over 500 tons	...	...	...	22	15	12	...	...	...
" 500 " " 1,000 tons	...	...	...	24	15	12	11	10	10
" 1,000 " " 2,000 tons	...	...	...	27	16	13	12	10	10
" 2,000 " " 3,000 tons	...	...	...	30	17	14	12	10	10
" 3,000 " " 4,000 tons	...	...	...	33	18	15	13	10	10
" 4,000 tons ...	...	...	...	36	18	15	13	10	10
PASSENGER VESSELS—WITHIN A STATE.									
125 tons and under	...	...	...	20	14	11	...	...	...
Over 125 and not over 250 tons	...	...	...	21	15	12	11	10	10
" 250 " " 500 tons	...	...	...	23	16	13	11	10	10
" 500 " " 1,000 tons	...	...	...	25	16	13	11	10	10
" 1,000 " " 1,500 tons	...	...	...	27	17	14	12	10	10
" 1,500 " " 2,000 tons	...	...	...	28	17	14	12	10	10
" 2,000 " " 3,000 tons	...	...	...	32	18	15	12	10	10
" 3,000 " " 4,000 tons	...	...	...	37	19	16	13	10	10
" 4,000 tons ...	...	...	...	43	20	17	14	10	10
CARGO VESSELS—WITHIN A STATE.									
125 tons and under	...	...	...	19	13	11	...	...	...
Over 125 and not over 250 tons	...	...	...	20	14	12	11	10	10
" 250 " " 500 tons	...	...	...	22	15	12	11	10	10
" 500 " " 1,000 tons	...	...	...	24	15	12	11	10	10
" 1,000 " " 1,500 tons	...	...	...	26	16	13	12	10	10
" 1,500 " " 2,000 tons	...	...	...	27	16	13	12	10	10
" 2,000 " " 3,000 tons	...	...	...	30	17	14	12	10	10
" 3,000 " " 4,000 tons	...	...	...	33	18	15	13	10	10
" 4,000 tons ...	...	...	...	36	18	15	13	10	10

## MONTHLY WAGES.—ENGINEERS.

(By Judgment delivered 5th May, 1909.)

Classification of Vessels.	Chief Engin'r.	Second Engin'r.	Third Engin'r.	Fourth Engin'r.	Fifth Engin'r.	Sixth Engin'r.	Seventh Engin'r.
	£ s.	£	£	£	£	£	£
With 100 n.h.p. ...	20 0	16	14	...	...	...	...
" 100 and within 150 n.h.p.	21 0	16	14	...	...	...	...
" 150 " " 200 "	22 0	17	14	...	...	...	...
" 200 " " 250 "	24 0	18	15	12	...	...	...
" 250 " " 350 "	25 0	18	15	12	...	...	...
" 350 " " 450 "	27 10	19	16	13	...	...	...
" 450 n.h.p. and upwards	29 0	20	16	13	12	11	10

## MONTHLY WAGES.—SEAMEN, Etc.

(By Judgment delivered 30th November, 1911.)

	Per Month.		Per Month.
	£ s.		£ s.
Boatswain ...	9 0	Donkeyman ...	11 0
A.B., employed as lamp trimmer	9 0	Greaser ...	10 0
A.B. ...	8 0	Fireman ...	10 0
Ordinary Seaman—		Trimmer ...	8 0
If 18 years or over	6 0		
If under 18 years ...	5 0		

## MONTHLY WAGES.—MARINE COOKS, Etc.

(By Judgment delivered 27th October, 1908.)

## PASSENGER VESSELS—INTERSTATE.

	£ s.		£ s.
Sculleryman ...	5 10	Second Cook ...	8 10
Third Cook ...	6 10	Baker ...	9 10
Butcher ...	7 0	Chief Cook ...	13 10
Ship's Cook ...	7 10	Galley Boy ...	3 0

## PASSENGER VESSELS TRADING WITHIN THE LIMITS OF SOME ONE STATE.

Chief Cook ...	12 0	Third Cook, or Third Cook and	
Second Cook ...	7 0	Butcher ...	5 0

## CARGO AND COLLIER VESSELS.

Chief Cook ...	10 0	Assistant Cook ...	3 0
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## MONTHLY WAGES.—MARINE STEWARDS AND PANTRYMEN.

(By Judgment delivered 10th May, 1910.)

	£	s.
Second Steward ... ..	7	10 per month
Steward in charge of second saloon ... ..	7	10 "
Pantryman (either saloon) ... ..	6	10 "
Forecabin Steward ... ..	6	10 "
Chief Saloon Steward ... ..	6	0 "
Barman and Storekeeper ... ..	5	10 "
Stewards of First Grade (including saloon waiter, bedroom steward, smoking-room steward, and each male adult in the stewards' department in either saloon not elsewhere specifically provided for	5	10 "
Stewards of Second Grade (including bathroom steward, maindeckman, messroom steward, assistant steerage steward, assistant cargo or collier steward, officers' steward, deck steward, second, third or other assistant pantryman, cadets, probationers or boys)	If under 17 years £2 If 17 to 19 years 3 If 19 to 21 years 4 If 21 years or over 5	
Night Watchman—		
If he have at least ten hours leisure per day, including seven hours continuous... ..	7	0 per month
If not ... ..	8	0 "
Cargo or Collier Steward ... ..	10	0 "

## SECTION XVII.

### ROADS AND RAILWAYS.

#### 1. Roads and Bridges.

1. **Introduction.**—In Year Books No. 1 (pages 541 to 551) and No. 2 (pages 675 to 685), a brief historical account was given of the construction and development of roads in Australia. It is not proposed to repeat that account in the present issue of the Year Book.

2. **Expenditure on Roads and Bridges.**—Figures shewing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of total loan expenditures by the State Governments up to the 30th June, 1911 :—

#### ROADS AND BRIDGES.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH UP TO THE 30th JUNE, 1911.

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Expenditure	£1,791,613	£176,475	£923,656	£1,464,736	£251,351	£2,700,000*	£7,307,831*

\* Approximate.

The following table shews the annual expenditure from loans on roads and bridges by the central Governments in each State and in the Commonwealth during each financial year since 1902 :—

#### ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATE GOVERNMENTS, 1902-3 to 1910-11.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1902-3 ...	73,471	44,770	1,333	200	...	55,687 <sup>1</sup>	175,461
1903-4 ...	47,812	17,267	...	78	...	39,037 <sup>1</sup>	104,194
1904-5 ...	59,019	14,945	...	...	...	55,303 <sup>2</sup>	129,267
1905-6 ...	23,666	1,919	...	...	712	57,536	88,833
1906-7 ...	11,162	444	...	...	15,613	75,399	102,618
1907-8 ...	1,690	23	...	...	7,956	94,443	104,112
1908-9 ...	...	237	...	...	8,120	136,674	145,031
1909-10 ...	...	50	...	...	24,117	... <sup>3</sup>	24,167 <sup>4</sup>
1910-11 ...	...	183	...	...	52,296	... <sup>3</sup>	52,479 <sup>4</sup>

1. For the calendar years 1902 and 1903 respectively.      2. For the eighteen months ended 30th June, 1905.      3. Not available separately.      4. Exclusive of Tasmania.

The two tables given above shew only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (a) there have been large expenditures from revenue, both by the central Governments and by local authorities, and (b) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction. Returns of expenditure, where available, are given below for each State. Although no revenue is now derived directly from roads and bridges, they are indirectly of great value to the community, forming, next to railways and public lands, the most considerable item of national property.

3. **New South Wales.**—The control of all roads, bridges, and ferries in New South Wales is now regulated by the Local Government Act 1906, which came into force on the 1st January, 1907 (see Section xxvi. *Local Government*.) Under the provisions of this Act the eastern and central divisions of the State are divided into shires and municipalities for the general purposes of local government, for the endowment of which a sum of not less than £150,000 is payable annually out of the consolidated revenue on the basis of a percentage subsidy on the proceeds of the general rates received by the District Councils. The control of all roads, bridges, and ferries (except those proclaimed "National" and those in the unincorporated areas of the Western Division) has been transferred from the Roads Department to the respective shire and municipal councils, who are now responsible for their construction and maintenance. Up to December, 1911, 38 miles of roads, 265 bridges, 54 wharves, 99 jetties, and 12 ferries had been proclaimed as "National" works. Power is given to construct new roads, to widen or close existing roads, to make by-laws for the regulation of traffic, etc.; in the case of the acquisition of land for the purpose of constructing new roads or of widening existing roads, the provisions of the Roads Act 1902 are incorporated. The Minister for Works is empowered to pay subsidies to the local authorities to maintain the roads. The roads leading to and within areas of lands which are made available for closer settlement will be constructed by the Government prior to transfer to the shires, as also will roads required mainly for tourists in districts not likely to produce revenue in rates to the local authorities.

(i.) *Principal Main Roads.* The four principal main roads in New South Wales run in the same direction as, and are roughly contiguous to, the four State-owned main railway lines. (a) *The Southern Road*, 385 miles in length, runs from Sydney to Albury, and before the days of railway construction, formed part of the highway over which the interstate traffic between Melbourne and Sydney used to flow. (b) *The South Coast Road*, 250 miles long, runs from Campbelltown along the top of the coast range and across the Illawarra district as far as Bega, from which place it extends as a minor road to the southern limits of the State. (c) *The Western Road*, 513 miles long, runs through Bathurst, Orange and many other important towns as far as Bourke, on the Darling River. (d) *The Northern Road*, 405 miles in length, runs from Morpeth, near Newcastle, as far as Maryland, on the Queensland border.

(ii.) *Length and Classification of Roads and Bridges.* The length of roads in the State (exclusive of 38 miles proclaimed as "National works") in 1911 was approximately 83,194 miles, of which 9514 miles were controlled by municipalities, 67,490 by the shires, and 6190 miles were in the unincorporated areas of the western division. The following table gives particulars for the year 1910-11 of roads classified according to whether metalled, etc., formed only, cleared only, or natural surface:—



## NEW SOUTH WALES.—APPROXIMATE LENGTH OF ROADS, 1910-11.

Classification.	Metalled, Ballasted, Gravelled etc.	Formed only.	Cleared only.	Natural surface.	Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
Metropolitan... ..	1,104	321	241	207	1,873
Country Municipalities ... ..	2,394	1,413	1,757	2,077	7,641
Shires ... ..	10,548	7,535	18,757	30,650	67,490
Western Division ... ..	80	137	2,669	3,304	6,190
Total ... ..	14,126	9,406	23,424	36,238	83,194

(iii.) *Bridges, Culverts, and Ferries.* The more important bridges have been proclaimed under the provisions of the Local Government Act as "National works," (see above) and these, together with the bridges, etc., in the Western Division, remain under the control of, and are maintained by, the Public Works Department. Particulars of bridges, culverts, and ferries in the State in 1910 are given in the following table:—

## NEW SOUTH WALES.—BRIDGES, CULVERTS, AND FERRIES, 1910.

Particulars.	Bridges, 20 ft. span and over.		Culverts.		Ferries.
	No.	Length.	No.	Length.	No.
		ft.		ft.	
National works ... ..	265	105,322	...	...	12
Metropolitan... ..	126	4,787	626	50,944	3
Country municipalities ... ..	618	39,536	3,252	71,838	13
Shires ... ..	3,146	188,397	29,560	259,513	91
Western Division (unincorporated) ... ..	124	21,815	107	1,435	5
Total ... ..	4,279	359,857	33,545	383,730	124

(iv.) *Expenditure on Roads and Bridges.* Since the year 1857 the total expenditure by the Roads Department and Roads Trust on roads and bridges is £24,608,535. In this expenditure is included the cost of administering the Department, services for other Departments, and payments on account of punt approaches and similar works incidental to the road traffic of the country. The amount expended from 1857 to the 30th June, 1900, for the next quinquennium and for each succeeding financial year up to 1910, is given below. Until recent years, the expenditure on these works increased at a much faster rate than the population.

## NEW SOUTH WALES.—EXPENDITURE BY ROAD DEPARTMENTS AND ROAD TRUSTS, 1857 to 1910.

Period.	Expenditure by Roads Department.	Expenditure by Trustees.	Total.
	£	£	£
1857 to 30th June, 1900 ... ..	18,714,078	1,258,027	19,972,105
1901 to 1905 ... ..	3,340,299	28,944	3,369,243
1906* ... ..	457,421	1,171	458,592
1907* ... ..	407,268	549	407,817
1908* ... ..	158,005	...	158,005
1909* ... ..	118,121	...	118,121
1910* ... ..	124,652	...	124,652
Total ... ..	23,319,844	1,288,691	24,608,535

\* Year ended 30th June.

The expenditure by the Department is now limited to the construction of roads in closer settlement areas and to the construction and maintenance of national bridges and ferries, and of works in the unincorporated areas of the Western Division.

4. **Victoria.**—Under the Local Government Act 1903, the control, construction, and maintenance of all roads, streets, and bridges are in the hands of Municipal Councils, who are empowered to open new roads, and to close, divert, or increase the width of any existing street or road, provided that no new road less than one chain in width may be opened without the consent of the Minister. The councils are also authorised to make and repair streets, lanes, or passages on private property, or forming means of back access to private property, and may compel the owners of such property to pay the cost of so doing. Footways in front of houses or grounds may be kerbed, flagged, paved, or asphalted, and the owners of such houses or grounds must bear half the cost of so doing. The revenue of the councils is derived from rates which may be either ordinary or special. The councils are empowered to raise loans for the purpose of making or opening new streets and roads, and for diverting, altering, or increasing the width of streets and roads, provided that the amount of such loan must not exceed ten times the average income of the council during the three years immediately preceding.

(i.) *General and Local Government Expenditure.* The gross amount expended directly by the State Government of Victoria on roads and bridges was £7,882,357 up to the end of June, 1901; figures for succeeding years are given in the table below. The annual expenditure from ordinary revenue by municipalities is not returned separately, but is included in Public Works Construction and Maintenance (see Section xxvi. *Local Government*). The subjoined table shews the cost from general revenue of municipalities of private streets, roads, etc., and also shews the amounts of municipal loan expenditure from 1902 to 1910 inclusive:—

#### VICTORIA.—EXPENDITURE ON ROADS AND BRIDGES, 1902 to 1910.

Financial Year. <sup>1</sup>	Annual Expenditure by State Government.	Municipal Loan Expenditure.		Formation of Private Roads, Streets, Lanes, etc. <sup>2</sup>	
		Cities, Towns, and Boroughs.	Shires.	Cities, Towns, and Boroughs.	Shires.
	£	£	£	£	£
1902 ... ..	75,855	13,047	15,656	17,655	4,542
1903 ... ..	69,200	13,540	12,696	15,279	4,028
1904 ... ..	42,144	12,929	1,444	15,432	4,072
1905 ... ..	30,393	21,515	2,560	21,593	2,083
1906 ... ..	56,145	5,673	8,480	18,237	1,390
1907 ... ..	43,119	21,137	7,495	25,244	3,052
1908 ... ..	72,246	21,859	5,206	30,907	1,811
1909 ... ..	99,572	21,389	9,058	34,285	3,603
1910 ... ..	102,309	25,311	18,077	29,304	2,859

1. The financial years of Melbourne and Geelong end on the 31st December and the 31st August respectively; those of all other municipalities on the 30th September.

2. Including the cost of flagging, asphaltting footpaths, etc., but exclusive of loan expenditure.

5. **Queensland.**—In Queensland the construction and maintenance of public roads are controlled under a system of local self-government, for the purposes of which the whole State is divided into (a) towns and (b) shires. The duties, rights, and responsibilities of the local authorities with regard to roads, streets, and bridges are regulated by the Local Authorities Act of 1902. The councils are invested with full powers to open, close, divert, or widen streets, roads, and bridges, and to make by-laws for the regulation of traffic, etc. The members of the councils are elected by the ratepayers, and with the aid of

executive officers they undertake the supervision and control of all necessary constructions and improvements of roads and bridges within their district. The rates which the councils are empowered to levy are supplemented by Government grants. Separate returns as to the expenditure by towns and shires on roads and bridges are not available, the amounts being included in the returns of expenditure on public works, particulars as to which expenditure may be found in the Section of this book on *Local Government*.

6. **South Australia.**—Under the provisions of the District Councils Acts, 1887 to 1904, and the Municipal Corporations Acts, 1890 to 1903, and of the Roads Acts, 1884 to 1908, the councils are invested with full powers as to the opening and making of new streets and roads, and the diverting, altering, or increasing the width of existing roads; as to raising, lowering, or altering the ground or soil of any street or road; and as to the construction, purchase, and management of bridges, culverts, ferries, and jetties.

(i.) *Main Roads and District Roads.* All the roads in each district are classified either as main roads or as district roads. Both classes of roads are under the direct control either of Municipal Corporations or of District Councils, but in the case of main roads the expenditure on construction and maintenance is chiefly provided for by Government grants, which are paid into a main road fund, while the expenditure on district roads is paid for out of general rates, and out of subsidies on the amount of such rates, granted by the central Government. Under the Main Roads Act 1908, a number of roads were declared to be main roads.

The total estimated length of streets and roads in South Australia up to the 30th June, 1910, was as follows:—

#### **SOUTH AUSTRALIA.—ESTIMATED LENGTH OF ROADS AND STREETS, 1910.**

Particulars.				Woodblocked.	Macadamised.	Other.	Total.
Miles	...	...	...	$\frac{1}{2}$	8,352	24,985	33,337 $\frac{1}{2}$

(ii.) *Expenditure by Corporations on Main and District Roads.* The following table shews the expenditure by municipal corporations on both main and district roads during each year from 1902 to 1910 inclusive:—

#### **SOUTH AUSTRALIA.—EXPENDITURE BY CORPORATIONS ON STREETS, ROADS, AND BRIDGES, 1902 to 1910.**

Year. <sup>1</sup>	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure	
		Construction.	Maintenance.	From Main Road Grants.	Total.	Construction.	Maintenance.
	£	£	£	£	£	£	£
1902 ...	159,753	11,671	46,980	5,470	7,249	117	6,580
1903 ...	155,857	3,005	52,539	5,458	6,986	...	6,433
1904 <sup>2</sup> ...	158,540	10,235	50,769	5,116	6,559	85	6,109
1905 ...	162,850	17,475	43,245	6,125	8,420	419	7,320
1906 ...	166,097	14,521	48,901	7,028	8,144	192	7,291
1907 ...	154,918	5,697	47,024	6,815	7,506	681	6,703
1908 ...	169,058	3,968	43,538	7,178	7,917	130	8,054
1909 ...	182,145	9,218	63,474	9,679	12,312	258	11,849
1910 ...	186,979	4,031	70,660	14,392	16,000	1,178	13,999

1. Up to and including the year 1903 the financial year ended on the 31st December, but after that date ends on the 30th November. 2. For eleven months ended the 30th November

(iii.) *Expenditure of District Councils on Main and District Roads.* The following table gives similar information with respect to main and district roads under the control of District Councils:—

**SOUTH AUSTRALIA.—EXPENDITURE BY DISTRICT COUNCILS ON STREETS,  
ROADS, AND BRIDGES, 1902 to 1910.**

Year Ended 30th June.	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure.	
		Con- struction.	Main- tenance.	From Main Road Grants.	Total.	Con- struction.	Main- tenance.
	£	£	£	£	£	£	£
1902 ...	134,780	22,925	43,430	62,990	87,070	6,039	63,084
1903 ...	134,216	20,573	44,070	56,092	74,877	5,766	54,778
1904 ...	140,216	22,682	47,519	54,645	69,868	6,280	49,465
1905 ...	150,309	32,157	37,613	55,799	75,622	4,650	56,448
1906 ...	132,085	24,564	47,502	60,558	63,723	5,293	54,027
1907 ...	128,787	27,795	47,731	70,560	70,769	5,598	57,152
1908 ...	134,169	35,161	48,289	80,834	80,875	6,277	70,343
1909 ...	140,552	35,922	60,328	79,194	79,554	10,610	69,387
1910 ...	152,091	33,853	64,079	106,096	106,221	10,752	76,150

7. *Western Australia.*—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State, except those within the boundaries of municipalities, are under the control of District Road Boards, constituted by the Roads Act, 1911.

(i.) *District Roads and Bridges.* Under the provisions of this Act any part of the State, not within a municipality, may be constituted by the Governor-in-Council into a Road District, under the control of a Board of not less than five, nor more than eleven members elected by the ratepayers. The Board is invested with full powers for controlling and managing all roads and bridges within the district, and is empowered to make by-laws for the general regulation of traffic, to control the weight of engines and machines permitted to cross any bridge or culvert, to regulate the speed limits of vehicles, lights to be carried by vehicles, the lighting of streets and roads, and the licensing of bicycles and motor cars. A District Road Board, may not, however, construct any road or street less than sixty-six feet wide without the consent of the Governor, nor any bridge or culvert at a greater cost than £100, except by the direction of the Minister. The construction of the more important bridges and culverts is generally carried out by the Government, the work, after completion, being handed over to the Road Board for maintenance. In case of land being required for the purpose of constructing a new street or road, or for widening an existing street or road, the provisions of the Public Works Act of 1902 are incorporated in the Roads Act. A Board may levy general rates within its district not exceeding two shillings and sixpence nor less than ninepence in the £ on the annual ratable value, and, if valued on the basis of unimproved values of lands, the general rate must not be over threepence nor under one penny in the £ on the capital unimproved value. Boards are also empowered to raise loans for works or undertakings or to liquidate existing loans, but the amount of such loans must not be greater than seven times the average amount of general rates collected for two years. In the case, however, of Boards already indebted, borrowing power to the extent of ten times the said average is given. For the purpose of paying the interest on money borrowed a Board may levy a special rate not exceeding one shilling and sixpence in the £. District Road Boards may also exercise the powers of Drainage Boards under the provisions of the Land Drainage Act of 1900.

(ii.) *Municipal Streets, Roads, and Bridges.* As regards roads, streets, and bridges within municipalities, these are under the control of local authorities elected under the provisions of the Municipal Corporations Act 1906. The municipal councils are invested with full powers for making, maintaining, and managing all streets, roads, and bridges within the municipal area, and may request the Governor to declare any such land reserved, used, or by purchase or exchange acquired for a street or way, to be a public highway, and on such request the Governor may, by notice in the *Gazette*, proclaim such highway absolutely dedicated to the public.

(iii.) *Length of Roads, Number of Bridges, and Expenditure on Roads and Bridges.* The following table gives particulars of the operations of the Road District Boards since the 1st January, 1903, when the Roads Act of 1902 (now superseded by the Act of 1911) came into force:—

**WESTERN AUSTRALIA.—PARTICULARS OF ROADS UNDER CONTROL OF DISTRICT ROAD BOARDS, 1904 to 1910.**

Year ended the 30th June.	Area.	Revenue.				Expenditure.	Length of Roads.				No. of Bridges and Culverts.	
		From General Rates.	From Grants and Subsidies.	From other Sources.	Total.		Cleared only.	Formed only.	Mettalled or otherwise Constructed.	Total.	Bridges.	Culverts.
	Sq. m.	£	£	£	£	£	Miles.	Miles.	Miles.	Miles.	No.	No.
1904 <sup>1</sup>	976,006	18,593	141,409	16,139	176,141	126,736	6,498	2,625	1,395	10,518	287	2,745
1905	975,802	23,558	90,475	11,547	125,580	122,091	8,268	2,864	1,813	12,945	319	3,272
1906	975,792	28,219	85,380	12,746	126,245	125,616	8,556 <sup>2</sup>	3,970 <sup>2</sup>	1,952 <sup>2</sup>	14,478 <sup>2</sup>	443 <sup>3</sup>	3,792 <sup>3</sup>
1907	975,780	35,088	60,313	13,796	109,197	126,716	9,269 <sup>4</sup>	3,878 <sup>5</sup>	2,088 <sup>5</sup>	15,235 <sup>4</sup>	491 <sup>5</sup>	3,961 <sup>6</sup>
1908	975,780	40,491	58,311	14,707	113,509	120,088	10,821	4,760	2,337	17,918	509	4,148
1909	975,781	46,034	52,382	15,869	114,285	116,723	12,537 <sup>7</sup>	5,195	2,797	20,529	554	4,574
1910	975,793	54,115	61,311	14,201	129,617	114,947	13,159 <sup>5</sup>	3,051 <sup>5</sup>	2,717 <sup>5</sup>	18,927 <sup>5</sup>	658 <sup>5</sup>	4,562 <sup>5</sup>

1. The returns given for 1904 cover a period of eighteen months, from the 1st January, 1903, to the 30th June, 1904. 2. Exclusive of four Boards which have not supplied the information. 3. Exclusive of three Boards which have not supplied the information. 4. Exclusive of six Boards. 5. Exclusive of seven Boards. 6. Exclusive of five Boards. 7. Exclusive of three Boards.

The following table gives similar information with reference to roads controlled by municipalities under the Municipal Institutions Act 1900 and the Municipal Corporations Act 1906:—

**WESTERN AUSTRALIA.—PARTICULARS OF STREETS, ROADS, AND BRIDGES UNDER THE CONTROL OF MUNICIPALITIES, 1902 to 1910.**

Year ended the 31st October.	No. of Municipalities.	Length of Streets, Roads, and Bridges.					Revenue.		Expenditure.	
		Paved, M't'l'd or Gr'v'd	Form'd only.	Clear'd only.	Not Clear'd	Total.	From Rates.	From Grants.	Works and Impr'v- ments.	Street Light'g and Wat'r'g
		Miles.	Miles.	Miles.	Miles.	Miles.	£	£	£	£
1902	44	265	52	221	249	787	94,894	81,436	125,721	19,434
1903	44	291	55	282	227	855	104,760	80,938	142,347	20,745
1904	43	325	64	252	260	901	119,110	90,868	187,747	23,361
1905	43	354	74	258	256	942	130,575	85,798	183,226	25,404
1906	45	396	79	275	202 <sup>1</sup>	1,042	146,206	95,997	165,421	31,045
1907	47	441	84	304	262 <sup>2</sup>	1,091	136,868	85,473	192,103	34,135
1908	47	474	90	323	271 <sup>1</sup>	1,159	139,228	67,315	103,943	31,682
1909	46	486	88	322	321	1,217	138,445	37,301	83,283	33,626
1910	42	525	104	309	297	1,245	138,719	13,336	87,998	30,965

1. Exclusive of three municipalities, which have not supplied the information. 2. Exclusive of four municipalities.

8. **Tasmania.**— In 1906 all the existing Road Trusts and Main Road Boards were abolished by the Local Government Act, which provided that the councils of all municipalities constituted under the Act should exercise all powers conferred upon, and should be liable to all the obligations imposed upon Road District Trusts and Main Road Boards by the Roads Act of 1884. The whole State, with the exception of Hobart and Launceston, is divided into municipal districts, each of which is under the control of a warden and councillors, and is deemed to be a road district and a main road district for the purposes of the Roads Act 1884.

(i.) *Mileage of Roads and Number of Bridges, 1910.* The following table gives particulars for the year 1910 as to length of roads and number of bridges and culverts under the control of the municipalities :—

**TASMANIA.—ROADS AND BRIDGES IN MUNICIPALITIES, 1910.**

Roads.			Bridges.	Culverts.
Macadamised or Gravelled.	Other.	Total.		
Miles. 5,146	Miles. 4,842	Miles. 9,988	No. 1,120*	No. 19,702*

\* Figures for 1909, those for 1910 not-available.

(ii.) *Revenue and Expenditure, 1910.* The following table gives particulars for the year 1910 of the revenue and expenditure of municipal councils in respect of roads and bridges :—

**TASMANIA.—ROADS AND BRIDGES. REVENUE AND EXPENDITURE, 1910.**

Revenue.				Expenditure.
From Government.	Rates.*	All other.†	Total.	
£ 35,616	£ 163,407	£ 72,337	£ 271,360	£ 266,108

\* Including receipts for power and lighting supplied. † Including current receipts from loans.

## 2. Railways.

### (A.) General.

1. **Improvements in Railway Statistics.**—In February, 1909, a report was issued by the Commonwealth Statistician to the Minister for Home Affairs on the subject of *The Desirability of Improved Statistics of Government Railways in Australia*. In this report a number of matters were specified in respect to which there was want of uniformity in the form and basis of the statistics published in the annual reports of the Railway Departments of the several States, and the importance and desirability of obtaining more complete and uniform statistics, especially with regard to "passenger-miles" and "ton-miles," were emphasised. This report was brought forward and considered by the Commissioners and General Managers of the Australian State Railways at their annual conference, held in Melbourne in May, 1909, with the result that resolutions were passed agreeing to publish in the annual reports of the State Railway Departments

uniform statistics regarding all the matters referred to by the Commonwealth Statistician, with two exceptions, viz.:—(a) with respect to the classification of tonnage carried and the revenue derived therefrom (see further (B) paragraph 17 hereof), and (b) with respect to "passenger-mileage" and "ton-mileage" (see further (B) paragraph 18 hereof). The resolutions referred to were to take effect from 1st July, 1909.

**2. Railway Communication in the Commonwealth.**—Although it was early recognised that railway construction was essential to the proper development and settlement, and to the future commercial prosperity of a large country like Australia, ill supplied with navigable rivers, the progress made in opening up lines during the twenty years which followed the completion of the first line in 1855, was very slow. This was no doubt due partly to the difficulty of borrowing money at a reasonable rate of interest, owing to the depreciation of Australian securities in London, and partly to the sparseness of the population, which it was feared would not justify the necessary expenditure. In the vicinity of Sydney, also, the ranges of mountains in the districts near the coast had to be either traversed or pierced by tunnels at a considerable expenditure of time and money, thus retarding the expansions of the railway systems which now have their starting point at that city. Since the year 1875, however, greater activity in the construction of railways has been manifested, and satisfactory progress has been made in all the States of the Commonwealth. The State Governments now fully recognise the great importance to the community of carrying on the work of construction, and of conducting the administration and management of the railways on business-like principles, free from undue political influence, and yet with regard to the general development of the country. In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral and mining districts towards the principal ports, which are themselves connected by systems of lines roughly running parallel to the coast. These are shewn on the accompanying map. In the east, lines radiating from Townsville, Rockhampton, Brisbane, and Sydney extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are three main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches to the coastal towns, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports and meeting the main line from Melbourne on the border of South Australia and Victoria. In addition to these main lines and their numerous branches, there are extensive suburban systems in Melbourne and some of the other cities of Australia, a considerable portion of the suburban traffic in Sydney being conducted by means of electric tramways. All these lines which have just been referred to are connected together by the main interstate line, which permits of direct communication between the four capital cities—Brisbane, Sydney, Melbourne, and Adelaide—a distance from end to end of 1790½ miles. The journey from Brisbane to Adelaide by rail occupies just over three days, including one stop of 8 hours 50 minutes at Sydney, and another of 3 hours 39 minutes at Melbourne. The distance between the capitals and the times occupied are as follows:—

Brisbane to Sydney ...	725 miles	27 hours 20 min.
Sydney to Melbourne ...	582½ "	16 " 51 "
Melbourne to Adelaide ...	482½ "	17 " 26 "

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach in Queensland to Oodnadatta in South Australia, a total distance of 3303 miles. In Western Australia there is a connected system of main or trunk lines between the ports of the State and the agricultural, pastoral, and mining districts. From these main lines a number of branches have been constructed, opening up fresh agricultural areas to the ports and markets of the State. The majority of such branch lines will, on being ultimately extended, form connections between

main lines and thus provide short and convenient routes between principal centres. In the northern parts of Queensland and in the Northern Territory there are also a number of disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

**3. Mileage Open for Traffic.**—In all the States of the Commonwealth the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of the Commonwealth lines have been constructed and managed by private companies, but at the present time practically the whole of the railway traffic in the Commonwealth is in the hands of the various State Governments. A large proportion of the private lines which are at present running have been laid down for the purpose of opening up forest lands or mining districts, and are not generally used for the conveyance of passengers or the public conveyance of goods. (See D. *Private Railways*, hereinafter.)

(i.) *Mileage of Government and Private Lines, 1855 to 1911.* The subjoined table shews the mileage of both Government and private lines open for traffic (exclusive of sidings and cross-overs) in each State and also in the Commonwealth at suitable periods since the inauguration of railways in Australia in 1855 up to the year 1911. The figures from 1855 to 1881 are given as up to the end of the calendar year; later figures are as up to the end of the financial year ended on the 30th June, unless otherwise stated, excepting the mileages for private lines which are in all cases taken for the calendar year:—

**GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OPEN, 1855 to 1911.**

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wlth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1855 ...	14	2½	*	†6½	*	*	*	23½
1861 ...	73	114	*	56	*	*	*	243
1871 ...	358	276	218	133	*	12	45	1,042
1881 ...	1,040	1,247	800	845	*	92	168	4,192
1890-1 ...	2,263	2,763	2,205	1,666	145½	†656	‡425	10,123½
1900-1 ...	2,926	3,238	2,904	1,736	145½	1,984	§618	13,551½
1909-10 ...	3,909	3,542	4,205	1,970	145½	2,977	673	17,421½
1910-11 ...	4,027	3,574	4,390	1,993	145½	3,208	675	18,012½

\* No railways yet constructed. † To the 31st December. This line between Goolwa and Port Elliot was opened in 1854 as a horse tramway, but now forms part of the railway system. ‡ To the 31st December, 1891. § To the 31st December, 1901.

It will be seen from the above table that the rate of construction up to the year 1871 was very slow, the average annual length of lines opened from 1861 to 1871 being only 80 miles for the whole Commonwealth. By the middle of the following decade, however, the principal mountain ranges had been crossed, and the work of construction could be proceeded with at a greater rate, and at a less cost per mile. The greatest period of activity was from 1881 to 1891, when the average annual length opened for traffic was 593 miles for the whole Commonwealth; the corresponding figures for the following periods from June 1891 to June 1901, and from June 1901 to June 1911, were 343 and 452 miles respectively.

**4. Comparative Mileage of State-owned and Private Lines, 1911.**—The subjoined table shews for each State and for the Commonwealth (a) the length of lines owned by the respective State Governments, all of which lines are of course open for general use by the



public, (b) the length of private lines available for general use by the public, and (c) the length not so available. The mileages specified in the case of State-owned lines are as up to the 30th June, 1911; those given for private lines are as up to the 31st December, 1910.

**GOVERNMENT AND PRIVATE RAILWAYS.—COMPARATIVE MILEAGE OF STATE OWNED LINES, OF PRIVATE LINES AVAILABLE FOR GENERAL TRAFFIC AND OF PRIVATE LINES NOT SO AVAILABLE, 1910-11.**

State.	State-owned Lines.	Private Lines available for General Traffic.	Total Open for General Traffic.	Private Lines used for Special Purposes only.	Grand Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	3,761	141	3,902	125	4,027
Victoria...	3,523	14	3,537	37	3,574
Queensland ...	3,868	50½	4,369	21	4,390
South Australia ...	1,935	...	1,935	58	1,993
Northern Territory	145½	...	145½	...	145½
Western Australia	2,376	277	2,653	555	3,208
Tasmania ...	470	166	636	39	675
Commonwealth	16,078½	1,099	17,177½	835	18,012½

**5. Comparative Railway Facilities in Different States, 1911.**—The area of territory and the population per mile of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1911, are shewn in the subjoined statement for each State and also for the Commonwealth:—

**GOVERNMENT AND PRIVATE RAILWAYS.—COMPARISON OF RAILWAY FACILITIES IN DIFFERENT STATES, 1911.**

State.	Population, 30th June, 1911.	Area.	Per Mile of Line Open.	
			Population.	Area.
	Number.	Sq. miles.	Number.	Sq. miles.
New South Wales ...	1,653,222	310,372	411	77.1
Victoria ...	1,327,065	87,884	371	24.6
Queensland ...	617,211	670,500	141	152.7
South Australia ...	410,327	380,070	206	190.7
Northern Territory ...	3,340	523,620	23	3,598.8
Western Australia ...	237,826	975,920	90	304.2
Tasmania ...	188,742	26,215	280	38.8
Commonwealth ...	4,487,733	2,974,581	249	165.1

**6. Classification of Lines according to Gauge, 1910-11.**—The subjoined tables shew the total mileage, exclusive of sidings and cross-overs, of (i.) Government railways; (ii.) Private railways open to the public for general traffic; and (iii.) Private lines used for special purposes, classified according to gauge. Particulars of Government railways are up to 30th June, 1911, of private railways open for general traffic to the 31st December, 1910, and of private railways open for special purposes to the 31st December, 1909.

**GOVERNMENT AND PRIVATE RAILWAYS.—CLASSIFICATION ACCORDING TO GAUGE,  
1910-11.**

State.	Mileage having a Gauge of—					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft.	
GOVERNMENT RAILWAYS.						
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales ...	...	3,721	40	...	...	3,761
Victoria ...	3,401	...	...	122	...	3,523
Queensland ...	...	...	3,868	...	...	3,868
South Australia ...	622	...	1,313†	...	...	†1,935
Western Australia ...	...	...	2,376	...	...	2,376
Northern Territory...	...	...	145½	...	...	145½
Total, Mainland...	4,023	3,721	7,742½	122	...	15,608½
Tasmania ...	...	...	446	...	24	470
Commonwealth ...	4,023	3,721	8,188½	122	24	16,078½
PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.						
New South Wales ...	45	60	36	...	...	141
Victoria ...	14	...	...	...	...	14
Queensland ...	...	...	411	...	90	501
South Australia ...	...	...	...	...	...	...
Western Australia ...	...	...	277	...	...	277
Tasmania ...	...	...	156	...	10	166
Commonwealth ...	59	60	880	...	100	1,099
PRIVATE RAILWAYS OPEN FOR SPECIAL PURPOSES.*						
New South Wales ...	...	121	4	...	...	125
Victoria ...	37	...	...	...	...	37
Queensland ...	...	...	17	...	4	21
South Australia ...	...	...	58	...	...	58
Western Australia ...	...	...	493§	...	62‡	555
Tasmania ...	...	...	25	...	14	39
Commonwealth ...	37	121	597	...	80	835
TOTAL.						
New South Wales ...	45	3,902	80	...	...	4,027
Victoria ...	3,452	...	...	122	...	3,574
Queensland ...	...	...	4,296	...	94	4,390
South Australia ...	622	...	1,371†	...	...	†1,993
Western Australia ...	...	...	§3,146	...	62	3,208
Tasmania ...	...	...	627	...	48	675
Northern Territory...	...	...	145½	...	...	145½
Commonwealth ...	4,119	3,902	9,665½	122	204	18,012½

\* Figures are for 1909.    † Including the mileage (478) of the Port Augusta to Oodnadatta line leased to the South Australian Government by the Commonwealth Government on 1st January, 1911.    ‡ Including 18 miles of 1 ft. 8 in. gauge.    § Including 6 miles of 3 ft. 4 in. gauge.

## (B.) Government Railways.

1. Mileage Open, 1902 to 1911.—The following table shews the length of Government railways open for traffic on the 30th June in each year since the year 1902:—

**GOVERNMENT RAILWAYS.—MILEAGE OPEN FOR TRAFFIC ON THE 30th JUNE  
IN EACH YEAR FROM 1902 to 1911 INCLUSIVE.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1902 ...	3,026	3,302	2,801	1,736	145½	1,360	*462	12,832½
1903 ...	3,138½	3,383	2,711	1,736	145½	1,516	*462	13,092
1904 ...	3,281	3,381	2,928	1,736	145½	1,541	462	13,474½
1905 ...	3,281	3,394	3,092	1,745½	145½	1,605	462½	13,725½
1906 ...	3,390	3,394	3,137	1,745½	145½	1,611½	462½	13,886
1907 ...	3,453	3,396	3,137	1,832	145½	1,764	462½	14,190
1908 ...	3,472½	3,396	3,359	1,879½	145½	1,943	463	14,658½
1909 ...	3,623½	3,410	3,498	1,888	145½	2,044½	463	15,072½
1910 ...	3,643	3,490½	3,660½	1,912½	145½	2,144½	469	15,466
1911 ...	3,760½	3,523½	3,867½	†1,935½	145½	2,375½	470½	16,078½

\* To the 31st December. † Including the mileage (478) of the Port Augusta to Oodnadatta line leased to the South Australian Government by the Commonwealth Government on 1st January, 1911.

The following statement shews the actual mileage opened for traffic in the year 1910-11, and also the annual average increase in mileage opened since 1901 in each State:—

**GOVERNMENT RAILWAYS.—MILEAGE OPENED ANNUALLY.**

State	N.S.W.	Vic.	Qld.*	S.A.	N.T.	W.A.	Tas.	C'wlth.
Mileage opened during 1910-11	116½	32½	207	23½	...	230	2	609½
Average annual mileage increase (1902 to 1911)	81½	24½	118½	22½	...	113	1	360½

\* Inclusive of the line from Stewart's Creek to Ayr purchased 1st January, 1911.

NOTE.—Owing apparently to remeasurements of lines in New South Wales and Western Australia, the mileages given in this table do not agree with those open for traffic given in the previous table.

(i.) *New South Wales.* During the year ended 30th June, 1911, the following lines were opened for traffic:—Cowra to Canowindra (23½ miles); Gulgong to Dunedoo (29½ miles); Lockhart to Mucra (22 miles); Narromine to Peak Hill (36½ miles); Cootamundra West to North Junction (½ mile); Fassifern to Toronto (2½ miles); North Strathfield to Concord West (third road) (1½ miles); a total of 116½ miles.

(ii.) *Victoria.* The following lines were opened for traffic during 1910-11:—Mildura to White Cliffs (Merbein) (7 miles); Beeac to Cressy (11½ miles); Beech Forest to Crowe's (14½ miles); a total of 32½ miles.

(iii.) *Queensland.* The increase of 207 miles in the mileage opened for traffic in 1910-11 was due to the opening of the following lines:—Benholme to Kirkup (7 miles);

Pinnacle to Finch Hatton (6 miles); Boyne Valley Junction to Many Peaks (53 miles); Yungaburra to Kureen (7 miles); Atherton to Herberton (15 miles); Kannangur to Linville (17 miles); Friezland to Selwyn (18 miles); Kureen to Malanda (1 mile); Kingsthorpe to Wagoon (21 miles); Laidley to Mulgowie (7 miles); Linville to Benarkin (11 miles); and the line from Stewart's Creek to Ayr (44 miles), which was purchased on 1st January, 1911, by the Government from the Ayr Tramway Joint Board.

(iv.) *South Australia.* The only line opened for traffic in this State during the year 1910-11 was that from Gawler to Nuriootpa, a distance of  $23\frac{1}{4}$  miles.

By the transfer to the Commonwealth Government of the line from Port Augusta to Oodnadatta, the railways of the State have undergone a reduction to the extent of 478 miles. This line has, however, been leased to the State by the Commonwealth Government as from the 1st January, 1911, and is therefore included in the mileage belonging to this State.

(v.) *Western Australia.* The following new sections of railway were taken over from the Public Works Department during the year 1910-11 and opened for public traffic:—Dwellingup to Holyoake (2 miles); Mount Magnet to Sandstone (93 miles); Nannine to Meekatharra ( $23\frac{3}{4}$  miles); Wokarina to Naraling (26 miles); Dowerin to Korrelocking ( $31\frac{1}{2}$  miles); Bridgetown to Wilgarup ( $25\frac{1}{4}$  miles); Korrelocking to Kununoppin ( $28\frac{1}{2}$  miles); a total of 230 miles. The Pickering Brook to Canning Mills railway ( $3\frac{1}{2}$  miles) was purchased by the Government.

(vi.) *Tasmania.* During the year 1910-11 a branch line to Griffith on the North-East Dundas tramway was opened for traffic.

2. **Non-conformity of Gauge.**—With but few exceptions, all the railway lines in the Commonwealth open for general traffic are now owned and managed by the respective States in whose territory they run, but, unfortunately for the purpose of interstate traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. In 1846 Mr. Gladstone, then Colonial Secretary, recommended in a despatch to the Governor of New South Wales that the 4 ft.  $8\frac{1}{2}$  in. gauge should be adopted. In 1850, however, the engineer to the Sydney Railroad and Tramway Company strongly advocated the adoption of the 5 ft. 3 in. gauge, and in 1852 an Act was passed making it compulsory that all railways in New South Wales should be constructed to the wider gauge, the Governors of Victoria and South Australia being duly advised of the step that had been taken. In 1852, however, the company mentioned, having changed its engineer, also changed its views as to the gauge question, and in the following year succeeded in obtaining the repeal of the Act of 1852 and in passing another, under the provisions of which the narrower gauge was made imperative. This step was taken without the concurrence of the other States concerned, and a considerable amount of ill-feeling arose, especially in Victoria, where two private companies had already placed large orders for rolling stock constructed to the broad gauge originally chosen. The result was that it was decided in Victoria to adhere to the 5 ft. 3 in. gauge as the standard gauge for that State, while the Sydney Railroad and Tramway Company proceeded with the construction of its lines to the 4 ft.  $8\frac{1}{2}$  in. gauge, and these two gauges have since been adhered to as the standard gauges of the respective States. The Queensland Government had at the outset adopted a gauge of 3 ft. 6 in. as being best suited to the requirements of the colony, and has since adhered to that gauge throughout the State, so that all goods have to be discharged and reloaded at the boundary between that State and New South Wales. In South Australia the broad gauge of Victoria was at first adopted, and the part of the interstate line between Adelaide and the Victorian boundary was constructed to that gauge, so that the line from Melbourne to Adelaide is uniform. In the lines which have been constructed more recently, however, and in

the Northern Territory, the South Australian Government has, with a view to economy in construction, adopted a gauge of 3 ft. 6 in. In Western Australia and Tasmania the 3 ft. 6 in. gauge was also adopted. It was recognised in both these States that the construction of railways was essential to their proper development, but as their financial resources would not bear a heavy initial expenditure in connection with the establishment of railway lines, it was decided to adopt the narrow gauge. In Victoria, light railways have been constructed in recent years to a gauge of 2 ft. 6 in., whilst in Tasmania short lengths have been laid down to a 2 ft. gauge.

**3. Interstate Communication.**—Until the railway systems of the eastern States were connected at the common boundaries the inconvenience of non-conformity of gauge was not felt. Since then, however, the necessary transshipments of both passengers and goods have been a source of trouble, delay, and expense. On the 14th June, 1883, a railway bridge over the River Murray at Wodonga was opened for traffic, and communication was then established between Melbourne and Sydney. On the 19th January, 1887, the last section of the Victorian line to Serviceton, on the South Australian border, was completed, and a junction was thus effected with the South Australian line to Adelaide. On the 16th January, 1888, a junction was effected between the New South Wales and Queensland lines at Wallangarra, but there was still a break in the line from Sydney at the Hawkesbury River, thirty-six miles from Sydney. This last link was, however, completed on the 1st May, 1889, by the opening of the Hawkesbury River bridge, 2900 feet in length, and railway communication was thus established between the four capital cities, Brisbane, Sydney, Melbourne, and Adelaide.

In February, 1911, a conference of officers of the Commonwealth and State Governments was held in Melbourne under the presidency of the Minister for Defence to consider matters of defence as affected by the facilities for transport of troops and armaments in the event of war. The proposal laid before the conference was that a railway central staff should be formed, so that in case of war the Defence Department would have at hand not only a well considered scheme of mobilisation, but also an organised staff of men ready to carry out the work of transport. In § 7 of the section on Defence will be found the result of this conference.

**4. Unification of Gauge.**—The development of the railway systems of the Commonwealth has shewn that the adoption of different gauges on the main lines in the several States was a serious error. The extra cost, delay, and inconvenience incurred by the necessity of transferring through-passengers and goods at places where there are breaks of gauge, though not at present of any appreciable magnitude, are becoming more serious as the volume of business increases. As an indication of the extra cost thus involved the following junction charges payable on interstate traffic between New South Wales and Victoria and *vice-versa* are given :—

#### JUNCTION CHARGES.—NEW SOUTH WALES AND VICTORIA, 1911.

General Merchandise. 1st to 3rd Classes.	Vehicles for which rate per mile operates.	Live Stock.	Empty Returns.	Other Goods.*
2s. 6d. per ton	1s. 6d. each	3s. per truck.	1s. per ton.	1s. 6d. per ton.

\* No junction charge is made on wool.

Although the cost of alteration to a uniform gauge would be great, many propositions have from time to time been put forward with the object of securing such a gauge, and attention has been drawn to the importance of the unification of gauges before further expenditure on railway construction is incurred by the States. The problem is, however, one which is by no means easy of solution, and the difficulties are increased by the introduction of what may be called questions of local or State policy. That its solution would facilitate the development of commerce and the settlement on the land throughout the Commonwealth, is now widely recognised. The economic disadvantages of breaks of gauge, and of any artificial restrictions in regard to trade finding its proper geographical outlets, are also seen by dispassionate observers. It is obvious, too, that in the event of a foreign invasion of any part of the seaboard, the interchange and concentrations of rolling stock for the transport of men and war material would be impeded, and might result in confusion and loss. It is asserted, moreover, that unification of gauges would tend to reduce to a negligible quantity all tendency to disorganisation and undue congestion likely to occur at times of bountiful seasons; that various trades and industries would be benefited by the aggregation, at times of abnormal or periodic activity, of idle trucks from other States; that there would be a large saving in the total capital expenditure on rolling stock; in other words, that the fullest use of all rolling stock and the meeting of all exigencies would be facilitated.

As regards the unification of gauges, the question naturally arises as to which gauge should be adopted as the universal gauge of the Commonwealth. As regards Government railways only, the New South Wales gauge has a mileage of 3761; Victoria and South Australia have a combined mileage of 4023 of 5 ft. 3 in. gauge; while Queensland, South Australia, the Northern Territory, and Western Australia have together 7702½ miles of 3 ft. 6 in. gauge. By far the greater part of the mileage of private railways open for general traffic has also been constructed to the 3 ft. 6 in. gauge. The mere question of preponderance of mileage, therefore, indicates the 3 ft. 6 in. gauge for adoption. But this question is obviously subordinate to those involving engineering and economic considerations. Thus, the relative efficiency from the widest point of view, the relative costs of alterations of permanent way and rolling stock, of carrying capacity and speed, that is to say, questions of a technical nature about which figures are not available, enter into the grounds for decision. As regards the unification of the New South Wales and Victorian lines, the advantage of reducing the broad gauge to the 4 ft. 8½ in. gauge is that there would be no necessity for the alteration of tunnels, cuttings, bridges, or viaducts.

In 1897 a conference was held between the Railway Commissioners of New South Wales, Victoria, and South Australia to consider and report upon the unification of the railway gauges of these States. In their report the Commissioners specified the mileage (including double roads, sidings, and private coal lines) of 4 ft. 8½ in. and 5 ft. 3 in. gauges in the several States to be as follows:—

**UNIFICATION OF 4 ft. 8 in. AND 5 ft. 3 in. GAUGES IN NEW SOUTH WALES,  
VICTORIA, AND SOUTH AUSTRALIA, MILEAGE OPEN, 1897.**

Particulars.	New South Wales.		Victoria.	South Aust.	Total.	
Gauge ...	4ft. 8½ in.	5 ft. 3 in.	5 ft. 3 in.	5 ft. 3 in.	4 ft. 8½ in.	5 ft. 3 in.
Mileage ...	3,340	51	3,868	590	3,340	4,509

The cost of unification of the gauges as estimated by the Commissioners at the conference was as follows:—

**COST OF UNIFICATION OF 4 ft. 8½ in. and 5 ft. 3 in. GAUGES, NEW SOUTH WALES,  
VICTORIA, AND SOUTH AUSTRALIA, 1897.**

Particulars.	Alteration of Per- manent Way and Works.	Alteration of Rolling Stock.	Temporary Workshops and Material.	Total.
	£	£	£	£
<i>New South Wales</i> , conversion from 4 ft. 8½ in. to 5 ft. 3 in. ...	2,518,000	1,702,000	40,000	4,260,000
<i>Victoria, South Australia, and New South Wales</i> (51 miles) conversion from 5 ft. 3 in. to 4 ft. 8½ in. ...	493,000	1,827,500	40,000	2,360,500

It may be seen that the difference in estimated cost in favour of change from the 5 ft. 3 in. gauge to 4 ft. 8½ in. gauge was £1,899,500. The Commissioners agreed that the work could be carried out within five years from the date of its commencement.

Military officers have asserted that from a defence point of view it is imperative that the present mixture of gauges should be abolished. Reference has already been made (see paragraph 3 hereof) to the Railway War Conference, which was called more particularly to deal with the break of gauge problem as it would affect the transport of troops and armaments. It may also be observed that in South Australia the Break of Gauge Commission is enquiring into the local aspect of what is practically the same problem, presented in its commercial aspect only.

The question whether a broader gauge would be advantageous for the American railways was discussed in an editorial of the "Engineering News" of New York, 7th December, 1911, it there being stated "that the railway experience of the United States would not justify Australia in adopting a broader gauge for its railway system than that in use here, viz., 4 ft. 8½ in."

It also pointed out in the editorial referred to that while "it is, of course, true that our (American) large cars and locomotives are an important factor in reducing the cost of long haul freight traffic, it does not follow that the much larger cars and locomotives which would be easily possible with a wider gauge would effect an economic saving taking the country as a whole."

The entire article supports the view that a 4 ft. 8½ in. gauge is from all points the most desirable.

**5. Average Mileage Worked, Train Miles Run, Number of Passenger Journeys, and Tonnage of Goods and Live Stock Carried, on Government Railways, 1902 to 1911.**—The table at head of page 693 gives the actual mileage open for traffic at the end of each financial year, but, in considering the returns relating to revenue and expenditure, and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shews the average number of miles worked, the total number of train miles run, the number of passenger journeys, and the tonnage of goods and live stock carried by the Government railways of each State during each financial year from 1901-2 to 1910-11 inclusive :—

**GOVERNMENT RAILWAYS.—AVERAGE MILEAGE WORKED, TRAIN MILES RUN,  
NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE  
STOCK CARRIED, 1902 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	N. Ter.	West. Aust.	Tasmania.	C'wealth.
AVERAGE MILEAGE WORKED.								
1901-2	2,953	3,265	2,801	1,736½	145½	1,356	468*	12,725
1902-3	3,074	3,335	2,777	1,736½	145½	1,434	469*	12,971
1903-4	3,224	3,371	2,827	1,736½	145½	1,535	469	13,308
1904-5	3,381	3,394	3,066	1,744½	145½	1,568	470	13,659
1905-6	3,367	3,394	3,109	1,745½	145½	1,607	470	13,838
1906-7	3,428	3,395	3,137	1,814½	145½	1,676	470	14,066
1907-8	3,469	3,396	3,239	1,860½	145½	1,830	470	14,410
1908-9	3,560	3,397	3,444	1,881½	145½	1,971	470	14,869
1909-10	3,625	3,441	3,533	1,893½	145½	2,102	474	15,214
1910-11	3,713	3,505	3,795	1,915	145½	2,286	478	15,837½

**TRAIN MILES RUN (,000 OMITTED).**

1901-2	11,649	11,285	5,666	4,196	30	4,508	903*	38,237
1902-3	11,548	10,286	4,947	3,770	31	4,611	932*	36,125
1903-4	10,400	9,173	4,647	3,739	32	4,594	948†	33,533
1904-5	10,468	9,023	4,918	3,773	31	4,285	946	35,444
1905-6	11,864	9,392	5,282	3,875	30	4,360	946	35,749
1906-7	12,949	10,035	6,126	4,334	31	4,181	981	38,638
1907-8	14,251	10,383	6,558	5,010	31	3,964	1,028	41,225
1908-9	15,074	11,291	7,391	4,925	31	4,102	1,029	43,843
1909-10	15,468	11,706	8,157	5,421	30	4,398	1,060	46,240
1910-11	17,007	12,973	9,367	5,946	30	4,963	1,041	51,327

**NUMBER OF PASSENGER JOURNEYS (,000 OMITTED).**

1901-2	30,885	57,465	18,421	9,643	4	8,158	762*	115,338
1902-3	32,384	54,798	17,353	9,061	4	9,106	815*	113,521
1903-4	33,793	54,282	17,528	9,747	4	10,226	873†	116,453
1904-5	35,158	59,702	7,656	9,867	4	11,845	824	125,056
1905-6	37,501	65,038	8,215	10,715	3	12,817	860	135,199
1906-7	41,413	70,170	9,302	11,498	3	13,180	952	145,518
1907-8	47,487	74,907	10,420	12,839	3	12,946	1,439	160,041
1908-9	52,052	81,021	11,522	13,853	3	12,717	1,547	172,715
1909-10	53,644	85,283	13,259	15,282	3	13,171	1,351	182,290
1910-11	60,920	93,796	14,791	16,620¶	2	14,823	1,692	202,639

**TONNAGE OF GOODS AND LIVE STOCK CARRIED (,000 OMITTED.)**

1901-2	6,468	3,434	1,892	1,392	2	1,888	\$407*	115,473
1902-3	6,596	3,094	1,652	1,350	2	1,795	\$419*	114,908
1903-4	6,657	3,439	1,646	1,516	6	2,057	\$425†	115,746
1904-5	6,724	3,628	1,779	1,681	4	2,154	\$394	116,364
1905-6	7,630	3,676	1,890	1,732	5	2,097	\$399	117,429
1906-7	8,794	3,966	2,357	2,043	3	2,091	\$428	119,682
1907-8	10,175	3,755	2,531	2,256	4	2,059	480	21,260
1908-9	9,299	4,167	2,662	2,166	3	1,997	483	20,777
1909-10	8,393	4,468	2,831	2,481	2	2,242	439	20,856
1910-11	10,355	4,968	3,295	2,731¶	2	2,489	364	24,204

\* For the calendar years 1902 and 1903 respectively. The average mileage worked is larger than the actual mileage open, owing to the fact that the Government Railways have running powers over certain private lines. † The returns are for a period of six months ended the 30th June, 1904; the figures here given are estimated for a full period of twelve months. ‡ These figures are partly estimated, the actual returns excluding journeys by season ticket holders. § Exclusive of live stock. ¶ Exclusive of live stock returns for Tasmania. ¶ Exclusive of Port Augusta-Oodnadatta line for six months ended 30th June, 1911.

**6. Length and Gauge of Railway System in each State.**—A map shewing the State railway lines, and also some private lines open to the public for general traffic, in the different States of the Commonwealth is given on page 709 hereafter. In all the States the Government railways are grouped, for the convenience of administration and management, into several divisions of systems, some of which have already been briefly referred to above in dealing with the history of construction of the railways



The subjoined summary shews concisely the gauge and length of the main and branch lines included in each division or system of the different States of the Commonwealth for the year ended the 30th June, 1911:—

## GOVERNMENT RAILWAYS, 1910-11.

Particulars.				Length.	Gauge.	
				Miles.	ft.	in.
<b>1. NEW SOUTH WALES.</b>						
(i.) The Northern line and branches—						
(a) Main line. Strathfield-Wallangarra ...	...	...	...	489	4	8½
(b) Branch lines ...	...	...	...	475	4	8½
(ii.) The Grafton-Tweed line ...	...	...	...	168½	4	8½
(iii.) The Western line and branches—						
(a) Main line. Granville-Bourke ...	...	...	...	495	4	8½
(b) Branch lines ...	...	...	...	781	4	8½
(iv.) The Southern line—						
(a) Main line. Granville-Wodonga ...	...	...	...	381	4	8½
(b) Branch lines ...	...	...	...	788½	4	8½
(v.) The South-coast (Illawarra) line—						
(a) Main line. Sydney to Nowra... ..	...	...	...	93	4	8½
(b) Branch lines ...	...	...	...	7	4	8½
(vi.) Suburban lines ...	...	...	...	42	4	8½
(vii.) Broken Hill line. Broken Hill-Tarrawingee ...	...	...	...	40	3	6
Total ... ..	...	...	...	3,760½	...	...
<b>2. VICTORIA.</b>						
(i.) The South-eastern system—						
(a) Main lines. Dandenong-Port Albert, Aspendale-Stony Point ...	...	...	...	145	5	3
(b) Branch lines ...	...	...	...	43½	5	3
(ii.) The Eastern system—						
(a) Main lines. Dandenong-Bairnsdale, Bayswater-Gembrook, Croydon-Healesville ...	...	...	...	18	2	6
(b) Branch lines ...	...	...	...	202	5	3
(iii.) The North-eastern system—						
(a) Main line. Craigieburn-Wodonga ...	...	...	...	97	5	3
(b) Branch lines ...	...	...	...	29	2	6
(iv.) The Northern system—						
(a) Main line. Digger's Rest-Echuca ...	...	...	...	171	5	3
(b) Branch lines ...	...	...	...	30	2	6
(v.) The North-western system—						
(a) Main line. Rockbank-Serviceton ...	...	...	...	446½	5	3
(b) Branch lines ...	...	...	...	135	5	3
(vi.) The Western and South-western system—						
(a) Main line. Werribee-Portland ...	...	...	...	953	5	3
(b) Branch lines ...	...	...	...	266	5	3
(vii.) The Suburban system—						
Including the lines to Aspendale, Dandenong, Bayswater, Croydon, Eltham, Craigieburn, Digger's Rest, Rockbank, and Werribee ...	...	...	...	210	5	3
Total ... ..	...	...	...	272	5	3
	...	...	...	44½	2	6
	...	...	...	273½	5	3
	...	...	...	188	5	3
Total ... ..	...	...	...	3,523½	...	...

Particulars.				Length.	Gauge.
				Miles.	ft. in.
<b>3. QUEENSLAND.</b>					
(i.) The Southern division—					
(a)	The Southern line.	Ipswich-Wallangarra	...	221	3 6
(b)	The Western line.	Gowrie Junction-Cunnamulla	...	496	3 6
(c)	The South-western line.	Warwick-Talwood	...	179	3 6
(d)	The Nth.-coast line.	Northgate Junction-235 mls. 14 chs.	...	234	3 6
(e)	The South-coast line.	Sunnybank-Tweed Heads	...	62	3 6
(f)	Suburban lines	...	...	73	3 6
(g)	Branch lines	...	...	572	3 6
(ii.) The Central division—					
(a)	The Coast line.	235 miles 14 chains-Rockhampton	...	161	3 6
(b)	The Central line.	Archer Park-Longreach	...	429	3 6
(c)	Branch lines	...	...	317	3 6
(iii.) The Northern division—					
(a)	Mackay line	...	...	55	3 6
(b)	Bowen line	...	...	48	3 6
(c)	The Great Nthn. Rlwy.	Townsville-Selwyn branches	...	754	3 6
(d)	Cairns line	...	...	103	3 6
(e)	Cooktown line	...	...	68	3 6
(f)	Normanton line	...	...	96	3 6
Total				3,868	...
<b>4. SOUTH AUSTRALIA.</b>					
(i.) The Midland system—					
(a)	Main line.	Adelaide-Terowie	...	140	5 3
(b)	Branch lines	...	...	148½	5 3
(ii.) The Northern system—					
(a)	Terowie-Quorn	...	...	94½	3 6
(b)	Other lines	...	...	430½	3 6
(iii.) The Southern system—					
(a)	Main line.	Adelaide to Serviceton	...	194½	5 3
(b)	Branch lines	...	...	158½	5 3
(iv.) The South-eastern system—					
(a)	Wolseley-Mount Gambier	...	...	112	3 6
(b)	Branch lines	...	...	118	3 6
(v.)	Port Broughton line	...	...	10	3 6
(vi.) The Western system—					
	Port Lincoln-Yeelanna	...	...	50¾	3 6
Total				1,457½	...
<b>5. WESTERN AUSTRALIA.</b>					
(i.) Eastern railway—					
(a)	Main line.	Fremantle-Beverley	...	111	3 6
(b)	Branch lines	...	...	127	3 6
(ii.) Eastern Goldfields railway—					
(a)	Main line.	Northam-Laverton	...	520	3 6
(b)	Branch lines	...	...	253½	3 6
(iii.) South-western railway—					
(a)	Main line.	Perth-Bunbury	...	115	3 6
(b)	Branch lines	...	...	363¾	3 6
(iv.) Great Southern railway—					
(a)	Beverley-Albany Jetty	...	...	243	3 6
(b)	Branch lines	...	...	111	3 6
(v.) Northern railway—					
(a)	Main line.	Geraldton-Nannine	...	333½	3 6
(b)	Branch lines	...	...	163¾	3 6
(vi.)	Hopetoun-Ravensthorpe railway	...	...	34	3 6
Total				2,375½	...

Particulars.				Length.	Gauge.
				Miles.	ft. in.
<b>6. TASMANIA.</b>					
(i.)	Main line.	Hobart-Evandale Junction	...	122 $\frac{3}{4}$	3 6
(ii.)	Derwent Valley line.	Bridgewater-Glenora	...	30 $\frac{1}{4}$	3 6
(iii.)	Apsley line.	Brighton Junction-Apsley	...	26	3 6
(iv.)	Parattah-Oatlands line	...	...	4 $\frac{1}{2}$	3 6
(v.)	Fingal line.	St. Mary's-Conara	...	46 $\frac{3}{4}$	3 6
(vi.)	Western line.	Launceston-Burnie	...	111 $\frac{1}{2}$	3 6
(vii.)	Chudleigh line	...	...	12 $\frac{1}{2}$	3 6
(viii.)	Scottsdale line.	Launceston-Scottsdale	...	47 $\frac{1}{2}$	3 6
(ix.)	Sorell-Bellerive line	...	...	14 $\frac{1}{2}$	3 6
(x.)	Zeehan line.	Regatta Point-Zeehan	...	29 $\frac{1}{2}$	3 6
(xi.)	North-east Dundas tramway.	Zeehan-Williamsford	...	20 $\frac{1}{2}$	2 0
(xii.)	Comstock tramway	...	...	4 $\frac{1}{2}$	2 0
Total				470 $\frac{1}{4}$	...
<b>7. FEDERAL RAILWAYS.</b>					
(i.)	Northern Territory—				
	Darwin to Pine Creek	...	...	145 $\frac{1}{2}$	3 6
(ii.)	South Australia—				
	Port Augusta to Oodnadatta	...	...	477 $\frac{3}{4}$	3 6
Total				623 $\frac{1}{4}$	...
Grand total of Government railways in the Commonwealth				16,078 $\frac{1}{2}$	...

**7. Administration and Control of Government Railways.**—In each State of the Commonwealth the policy has now been established that the railways should be kept under the control of the Government. This policy, as has been shewn, was early actualised in Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. It may here be observed that for many years past nationalisation of railways throughout Europe has been a feature of the development of railway policy, and so far there is no sign of any movement in an opposite direction. Indeed it may be said that the Governments have recognised the supreme importance of a railroad policy, not only as an element in the industrial, but even in the political life of nations, and have felt that nothing short of complete ownership and direct management of the railroads would give them the power which, for national reasons, they must exert. In America the modern tendency is to so condition the freights by Governmental action as to give at least a quasi-national character to the railways.

(i.) *New South Wales.* Prior to the year 1888 the control of the State railways in New South Wales was vested in the Minister for Works, under the provisions of the Railways Act of 1858, the actual management being in the hands of a Commissioner. In 1888, however, the Act referred to was repealed by a new Act, the object of which was to improve the administration and to free it from political influences. Under this Act, as amended in 1901, three Commissioners were appointed for a period of seven years, but in 1906 an amending Act was passed, which provides for the appointment of a Chief Commissioner, with supreme power, an Assistant Commissioner for Railways, and an Assistant Commissioner for Tramways. The Chief Commissioner is required to present an annual report to Parliament, through the Minister for Railways, setting forth an account of his proceedings, and of the revenue and expenditure during the previous year. New lines are constructed by the Railway and Tramway Construction Branch of the Public Works Department, and on completion are handed over to the control of the Chief Commissioner.

(ii.) *Victoria.* In consequence of general dissatisfaction in regard to the management of the railways by political heads, a new Railway Act was passed and came into force on the 1st November, 1883. Under its provisions the management and con-

trol of the State railways were placed in the hands of three Commissioners, who supervised the construction of new lines as well as the general management of lines already open for traffic. On the 1st January, 1892, the duty of the construction of new lines was transferred to the Board of Land and Works, and the Minister, under the provisions of the Railways Act of 1891, was given greater powers to interfere in matters of policy. In 1895 the Government appointed a Board to inquire into and report upon the general working of the Railway Department, and as a result of their report the Railways Act of 1896 was passed. The management was placed in the hands of one Commissioner until the year 1903, when the Victorian Railway Commissioners Act was passed, and the administration was again placed in the hands of three Commissioners.

Proposals for the construction of new lines are in every case, in which the estimated cost is in excess of £20,000, investigated by the Parliamentary Standing Committee on Railways, whose recommendation is submitted to the Legislature. Any new line authorised by Parliament is constructed under the supervision of the Chief Engineer for Railway Construction, who is responsible to the Minister of Railways for the time being, and is not subject to the control of the Commissioners. New lines are constructed under the authority of the Railway Lands Acquisition Acts 1893 to 1899.

(iii.) *Queensland.* The first Act referring to the construction of railways, passed by the Queensland Legislature in 1863, provided for the appointment of a Commissioner of Railways, who was to be the permanent head of the Railway Department, but was, however, also to be subordinate, as regards all matters of administration, to the Minister in charge of the railways for the time being. This arrangement was continued until the year 1888, when an Act was passed providing for the appointment of three Commissioners invested with full powers as to the administration, management, and construction of the railways, the control of which was thus removed from political influence. The functions of a Minister for Railways were not abolished, but they were so defined and limited that the Minister became in effect an intermediary between the Commissioners and Parliament, to which body the Commissioners were bound to make an annual report, setting forth an account of their proceedings and a financial statement for the previous year. The Railways Act Amendment Act of 1896 again provided for the appointment of one Commissioner only, for a term not exceeding three years, extended in 1902 to a maximum term of seven years. Under the Act of 1896 the Commissioner is required to prepare an annual report of the Railway Department. New lines are constructed by the Commissioner under the Railways Act of 1906. Under this Act the ratepayers in any district in which a new line is constructed are liable for the amount of any deficiency in case the earnings in any year are less than the working expenses, together with interest at the rate of 3 per cent. on the cost of construction. The separation from each other by long distances of some of the railway lines in Queensland puts difficulties in the way of their economical administration and supervision, since it is found necessary to maintain, in connection with each of the principal detached lines, a separate staff of engineering and managing officials.

(iv.) *South Australia.* The Railway Clauses Consolidation Act, passed in South Australia in March, 1847, was the first Act passed in Australia referring to the construction of railways; its provisions, however, contained many obsolete clauses of English railway legislation, and were soon modified. In 1887 an Act to make better provision for the construction, maintenance, and management of railways was passed, and came into force on the 1st June, 1888; it removed the control of the railways from political influence and provided for the appointment of three Commissioners, into whose hands the management and the supervision of the railways passed. The Act of 1887 was, however, amended by the Railway Commissioners Act of 1894, which provides for one Commissioner only assisted by a Board of Advice. Under the Act of 1894 the Commissioner has the same powers as were vested in the three Commissioners under the Act of 1887. Further amendments were made in the years 1902 and 1906, but since the Act of 1894 was passed the management, maintenance, and construction of the railways have remained in the hands of one Commissioner, who is required to present to Parliament an annual report of his proceedings, and of the revenue and expenditure during the previous year.

(v.) *Northern Territory.* On the 1st January, 1911, the railway from Darwin to Pine Creek passed from the control of South Australia with the transfer of this territory to the Commonwealth Government.

(vi.) *Western Australia.* From the time of the inception of railways in this State until the granting of responsible government in 1890, the construction, maintenance, and control of all railways were in the hands of an official holding the title of Commissioner of Railways, and having a seat in the Executive Council. This official was invested with very extensive powers for all purposes connected with railways, and had also to supervise the safe working and the charges made by private railway owners. On the institution of responsible government the office of Commissioner was converted into a Ministerial one; the active management was placed in the hands of an officer styled General Manager of Railways, while construction works on new lines were carried out by the Department of Public Works. In 1902 a Bill was introduced into Parliament providing for the appointment for a term of five years of a Railway Commissioner to be free from political influence. This Bill received the Vice-regal assent on the 20th December, 1902. The former Railway Acts, of which the Act in question was an amendment, continued to remain in force, with the result that certain anomalies and ambiguities arose, in consequence of which a Consolidating Government Railways Act was passed in 1904. Under its provisions the administration of all Government railways was placed in the hands of the Commissioner, who was relieved from the supervision of private railways. The construction of new railways or of extensions is left, as formerly, in the hands of the Minister controlling the Department of Public Works. The Act of 1904 was amended in certain details in 1907.

(vii.) *Tasmania.* The law relating to the control and management of the Tasmanian Government railways was amended and consolidated by the Railway Management Act of 1891, which has in turn been amended by Acts passed in 1893, 1896, 1901, and 1910. Under the last Amending Act a Railway Commissioner has been appointed for four years, in whose hands are placed the control, management, and maintenance of every Government railway.

8. *Lines under Construction, and Authorised and Proposed Lines, 1911.*—The following statement gives particulars up to the 30th June, 1911, of the mileage of Government railways (a) under construction, and (b) authorised for construction but not commenced:—

**MILEAGE UNDER CONSTRUCTION AND AUTHORISED, 30th JUNE, 1911.**

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Mileage under construction ...	293 $\frac{1}{4}$	210 $\frac{3}{4}$	1,640	111 $\frac{1}{2}$	354	24	2,633 $\frac{1}{2}$
Mileage authorised ...	243	85 $\frac{3}{4}$	611	178	507	20	1,644 $\frac{3}{4}$

(i.) *Lines under Construction.* In spite of the great extension of State railways which has taken place since the year 1875 throughout the Commonwealth, there are still, in some of the States, tracts of country of immense area, which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished; the general policy in the States is to extend the existing lines inland, in the form of light railways, as settlement increases, and although it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time, for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view. (a) In *New South Wales* the lines under construction are chiefly of the "pioneer" class, and are made with a view to affording railway communication over level country to districts in which the traffic would not warrant the expenditure necessary to provide thoroughly equipped lines. As the traffic increases the permanent way is strengthened in order to allow the heavy types of engines to run over it. It is probable that railway extension in *New South Wales*, in the near future, will be mainly confined to lines of the "pioneer" class.

The lines under construction on 30th June, 1911, were those from West Maitland to Dungog (32½ miles), Dungog to Gloucester (38½ miles), Gloucester to Taree (44 miles), Taree to Wauchope (47½ miles), and Glenreagh to South Grafton (27½ miles). The extension of these lines between Wauchope and Glenreagh, a distance of 120½ miles, has been authorised, and when completed will form an alternative main route between Newcastle and Brisbane. Other lines under construction are as follows:—Moree to Garah (36½ miles), Cooma to Nimitybelle (24½ miles), Cullivel to Clear Hills (30½ miles), Flemington to Belmore, Wardell Road to Glebe Island, and Darling Island Railway (in all 11½ miles). (b) *Victoria*. In this State the following lines were under construction by the Board of Land and Works on the 30th June, 1911:—5 ft. 3 in. gauge: White Cliffs to Yelta (9½ miles), Ouyen to Kow Plains and Murrayville (68½ miles), Cressy to Newtown (24½ miles), Gheringhap to Maroona (100½ miles), Eltham to Hurst's Bridge (6½ miles), making in all 210½ miles. (c) *Queensland*. In December, 1910, the North Coast Railway Act was passed. Under this Act a series of lines when constructed will link up a number of existing lines in such a way that a through line will be obtained from Rockhampton to Cairns, *via* Mackay and Townsville, a total distance of 569 miles. Of this distance 115 miles are already constructed and in operation. By the completion of this line it will be possible to travel from Cairns to the southern border of the State at Wallangarra, a total distance of about 1198 miles. At the same time the Great Western Railway Act was passed. Under this Act provision is made for the extension in a westerly or south-westerly direction of the lines already constructed to Wallal, Blackall, Winton, and Malbon in such a manner that they will form junctions with a line to be made running north-westerly from Tobermory to Camooweal. These extensions, together with the north-westerly line, will make an aggregate distance of 1282 miles to be constructed. With the completion of both these schemes the railways of this State will be brought into direct communication with each other on both their east and west boundaries. On the 30th June, 1911, the following lines were under construction:—Herberton to Evelyn (17 miles), Finch-Hatton to Eungella Range (7 miles), Dalby to Tara (52 miles), Talwood to Thallon (Bullamon) (39 miles), Pittsworth to Millmerran (27 miles), Warwick to Maryvale (19 miles), Port Alma Branch (17 miles), McGregor Creek Extension (1 mile), Kingaroy to Nanango (16 miles), Mount Morgan to the Dawson River (69 miles), Oakey to Cooyar (39 miles), Rosewood to Marburg (9 miles), Cordalba to Dallarnil (31 miles), Gayndah to Mundubbera (23 miles), Allora to Goomburra (9 miles), Keefton to Imbil (24 miles), Blackbutt to Yarraman (15 miles). Of the Great Western Railway the following parts are under construction:—Section A: From Wallal westward (245 miles); Section B: From Blackall south-west (348 miles); Section D: From Malbon, south-west (328 miles). The following parts of the North Coast Railway are under construction:—Section A: From Rockhampton northwards to near St. Lawrence (123 miles); Section B: Portion from Mackay southwards to near St. Lawrence (72 miles); Section C: From Bobawaba northwards to Burdekin River (17 miles); Section D: From Ayr southwards to Burdekin River (5 miles); Section E: From Babinda southwards to near Cardwell (88 miles); a total distance of 1640 miles. The two first-named lines were opened on 31st July, 1911. (d) *South Australia*. In this State the lines under construction on the 30th June, 1911, were as follows:—Gawler to Angaston (3½ miles) and Yeelanna to Minnipa Hill (108 miles). (e) In *Western Australia* the following lines were in course of construction by the Public Works Department on the 30th June, 1911:—Kununoppin to Merredin (37 miles), Goomalling to Wongan Hills (34 miles), Southern Cross to Bullfinch (21 miles); Naraling to Yuna (12 miles), Port Hedland to Marble Bar (114 miles). Katanning to Nampup (38 miles), Wagin to Dumbleyung Extension (23 miles), Dwellingup to Hotham (23 miles), Boyup to Kojonup (52 miles). Of these the first two mentioned were opened in August, 1911. (f) *Tasmania*. At the end of the year 1910-11, one line, *viz.*, Scottsdale to Branhholm, 24 miles in length, was in course of construction.

(ii.) *Lines Authorised for Construction*. (a) *New South Wales*. In addition to the North coast railway extension from Wauchope to Glenreagh (120½ miles) the construction of lines from Garah to Mungindi (40½ miles), Nimitybelle to Bombala (40

miles), and Glenreagh to Dorrigo (42 miles) had been authorised up to 30th June, 1911. (b) In *Victoria* the following lines were authorised, but their construction had not been commenced up to the end of June, 1911:—5 ft. 3 in. gauge: Noradjuha to Toolondo (11½ miles), Bairnsdale to Orbost (60 miles), and Jeparit to Loxton (14½ miles). (c) *Queensland*. In addition to the new lines upon which work has been commenced lines from Woodford to Kilcoy (17 miles), Miles to Taroom (first section) (44 miles), Thallon to Dirranbandi (40 miles), have been approved of by Parliament, which has also authorised the construction of the following parts of the Great Western Railway, Section C, from Winton south-west (361 miles); and on the North Coast Railway, Section B, from Mackay Railway northwards to near Midge Point (50 miles); Section C, from near Midge Point to Proserpine (13 miles); Section D, from Townsville northward to near Cardwell (86 miles). (d) In *South Australia* the construction of a line from Tailem Bend to Brown's Well (100 miles) on the 5 ft. 3 in. gauge, and of a line from Cummins to Darke's Peak (78 miles) on the 3 ft. 6 in. gauge, was authorised during the year 1909-10. It is proposed to electrify the Adelaide-Glenelg (6½ miles) line at an estimated cost of £115,000, and also in newly settled districts to construct light lines to be run by District Councils. (e) In *Western Australia* six lines having a total length of 507 miles were authorised for construction up to the 30th June, 1910. These lines were—Northampton to Ajana (40 miles); Tambellup to Ongerup (60 miles); Wickpin to Merredin (120 miles); Wongan to Mullewa 190 miles; Brookton to Kunjin (47 miles); Quairading to Nunagin 50 miles). (f) In *Tasmania* the construction of a line, 20 miles along, from Burnie to Flowerdale was authorised by Parliament.

(iii.) *Proposed Transcontinental Lines.* (a) *Port Augusta to Kalgoorlie Line.* The necessary arrangements have now been practically completed for connecting the railways of the eastern and southern districts of Australia with the Western Australian lines by the construction of a line between Port Augusta, in South Australia, and Kalgoorlie, on the Western Australian goldfields, a distance of 1100 miles. The Transcontinental Railway Bill, passed in 1907 by the Federal Houses of Parliament, provided for the expenditure of a sum of £20,000 for a preliminary survey of the proposed line. This survey was commenced in 1908, and was completed in March, 1909. The route of the preliminary survey may be seen on reference to the map on page 709 hereof; the route *via* Tarcoola was, for several reasons, chosen in preference to that *via* Gawler Range and Fowler's Bay. It is stated in the report of the surveyors that while some part of the country which it is proposed to traverse is impossible for settlement, there is an area of good country, extending to about 40,000 square miles, which can be considered favourable for pastoral development. The estimated cost of construction and equipment of the line on the basis of a 4 ft. 8½ in. gauge is £3,988,000. It is claimed that the line would be of immense benefit in the expedition of the European mails to the southern and eastern parts of the continent, and, if occasion should arise, in facilitating the transport of troops. In September, 1911, a Bill was introduced into the Commonwealth Parliament to authorise the construction of the line. The Bill became law in December following, but the construction of the line was not to be commenced until the States of South Australia and Western Australia had granted or agreed to grant such portions of the Crown lands as were necessary for the construction, maintenance and working of the railway. In South Australia an Act has been passed enabling the Commonwealth to acquire lands for the railway in South Australia not exceeding one-eighth of a mile wide on either side of the line, but no town lands are to be included at any time. In Western Australia an Act has also been passed by which all necessary lands are to be granted to the Commonwealth for railway purposes. A Railway Construction Department has been created to carry out the work, and an early start with the Kalgoorlie-Port Augusta railway, which is to have a gauge of 4 ft. 8½ in., is to be made by working forward from each end of the line. (b) *Northern Territory Transcontinental Line.* Another proposal is to extend the main northern line from Adelaide, which at present terminates at Oodnadatta, as far as Pine Creek, the southern terminus of the Northern Territory line from Darwin. The distance between Oodnadatta and Pine Creek by the route followed by the telegraph wire is 1140

miles, and it is claimed that, if a railway line were constructed between these two places, it would be practicable for passengers and mails to reach London from Adelaide in seventeen days, *via* Port Darwin and the trans-Siberian railway. In the course of the year 1896 offers were made on behalf of various syndicates to construct this line, but the Government was not at that time prepared to recommend the acceptance of any offer based upon the land grant or guarantee system. In 1902, however, the Trans-continental Railway Act was passed, and the Government invited tenders for the construction of 1063 miles of 3 ft. 6 in. line on the land grant system, to be built at the rate of at least 100 miles in any one year, the grant of land offered amounting to nearly 80,000,000 acres. No tenders were accepted and subsequent offers have been refused. The country through which this line would pass presents no great engineering difficulties; for the most part it is one vast plain, with an occasional sand ridge or a watercourse. The construction of this line is provided for in the Northern Territory Acceptance Act 1910. (See Section XXXII., *The Northern Territory*.) Under that Act the property in the railways from Port Augusta to Oodnadatta and from Darwin to Pine Creek has been transferred to the Commonwealth Government as from the 1st January, 1911. In the meantime the former of these lines is being worked under the control of the South Australian Railway Commissioner by agreement between the Commonwealth and South Australian Governments.

**9. Cost of Construction and Equipment of Government Railways.**—The total cost of construction and equipment of the State railways of the Commonwealth at the 30th June, 1911, amounted to £152,855,231, or to an average of £9507 per mile open for traffic. Particulars as to the capital expenditure incurred in each State are given in the following table:—

**GOVERNMENT RAILWAYS.—COST OF CONSTRUCTION AND EQUIPMENT TO  
THE 30th JUNE, 1911.**

State or Territory.	Length of Line Open.	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.
	Miles.	£	£	£
New South Wales ... ..	3,760½	50,971,894	13,555	30.83
Victoria ... ..	3,523½	44,121,767	12,522	33.25
Queensland ... ..	3,868	25,898,841	6,696	41.96
South Australia ... ..	1,935½	14,589,639	7,539	35.56
Northern Territory ... ..	145½	1,173,332	8,064	351.30
Western Australia ... ..	2,375½	12,019,927	5,060	41.76
Tasmania ... ..	470½	4,079,831	8,676	21.62
Commonwealth ... ..	16,078½	152,855,231	9,507	34.06

It will be seen that the lowest average cost per mile open is in Western Australia, and is only £5060, which is less than one-half of the highest average cost, namely, £13,555 in New South Wales, compared with an average of £9507 for the whole Commonwealth. In Western Australia there have been comparatively few engineering difficulties to contend with, and also the system has been adopted in that State of giving contractors the right to carry traffic during the period of their contracts, with the result that, at all events in all goldfields railway contracts, the cost of construction has been considerably lessened.

(i.) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of the lines constructed lately in the Commonwealth is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales could be laid down at a cost of £1750 per mile (exclusive of stations and bridges). It should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since



1892 over one thousand four hundred miles of the "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2000 to £7500 per mile, according to the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar, the average cost of which, to the end of June, 1911, was £3754. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost to the 30th June, 1911, of the narrow gauge (2 ft. 6 in.) lines, having a length of one hundred and twenty-two miles, was only £310,010, which gives an average cost per mile of only £2541. In the other States also the cost of construction per mile has been reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened and the stations and siding accommodation enlarged. The subjoined table gives examples of some of the more expensive lines, most of which were built in the early days:—

**GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT LARGE CAPITAL EXPENDITURE PER MILE OPEN.**

Line.	Gauge.	Length.				Total Cost.	Average Cost per Mile.	Date of Opening.
		Double Line.	Single Line.	Third Line.	Total.			
	ft. in.	m. ch.	m. ch.	m. ch.	m. ch.	£	£	
NEW SOUTH WALES—								
Penrith to Bathurst ...	4 8½	60 26½	50 64½	...	111 10½	3,263,363	29,365	1876
Sydney to Kiama ...	4 8½	24 11½	48 36½	0 63½	73 31½	2,172,808	29,605	1887
Homebush to Waratah	4 8½	74 23½	21 12	2 22½	97 57½	3,293,510	33,703	1889
VICTORIA—		Miles.	Miles.	Miles.	Miles.			
Melbourne to Bendigo	5 3	100.89*	...	...	100.89	4,856,613	48,137	1862
N. Geelong to Ballarat	5 3	41.45*	11.76	...	53.21	1,913,223	35,956	1862

\* Double lines and over.

The next table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile.

The average cost per mile of the 436.35 miles comprised in the above table was £35,521, whereas the average cost of the 487.18 miles referred to in the next table was £1812.

**GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT SMALL CAPITAL EXPENDITURE PER MILE OPEN.**

Line.	Gauge.	Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft. in.	Miles.	£	£	
NEW SOUTH WALES—					
Parkes to Condobolin ...	4 8½	62½	130,839	2,085	1898
Dubbo to Coonamble ...	4 8½	96	241,524	2,516	1903
VICTORIA—					
Wangaratta to Whitfield	2 6	30½	39,260	1,288	1899
Birchip to Cronomby ...	5 3	26½	41,429	1,566	1899
Ultima to Chillingollah	5 3	20½	29,292	1,454	1909
QUEENSLAND—					
Dalby to Bell ...	3 6	23½	31,856	1,356	1906
Pinnacle to Finch Hatton	3 6	6½	10,020	1,627	1910
SOUTH AUSTRALIA—					
Port Lincoln to Cummins	3 6	42	87,336	2,084	1907
Tailem Bend to Pinnaroo	5 3	86½	135,303	1,563	1906
WESTERN AUSTRALIA—					
Goomalling to Dowerin	3 6	15½	17,726	1,171	1906
Coolgardie to Widgiemooltha	3 6	51½	78,433	1,527	1908
Narrogin to Wickepin	3 6	26½	39,983	1,515	1909

The comparisons afforded in the two preceding tables are subject to certain limitations, inasmuch as the figures in each case represent the total cost to date, and the cost is naturally greater in the case of the older lines. Further, the figures given represent the cost of construction only (i.e., are exclusive of cost of equipment), and cannot therefore be directly compared with the average cost per mile open given in the preceding table.

(ii.) *Adoption of Special Means of Locomotion.* The Railway Commissioners of Victoria have obtained from America two "M'Keen" motor cars, with the view of testing their suitability for light passenger traffic on country lines, and they are to be put into operation very shortly. The Railway Commissioner of South Australia has given orders for the construction of a truck to be run on one rail. The experiment is to be made with a view to the solution of the problem of how to get produce to stations in the Pinnaroo district. The propelling force of the engine to be used will be petrol. If the test prove a success, the Government intends to construct small lines as feeders to the Pinnaroo railway and thus convey produce over the sand hills cheaply.

(iii.) *Capital Cost of Construction and Equipment, Total and per Mile Open, 1902 to 1911.* The increase in the total capital cost of construction and equipment of Government railways in each State and in the Commonwealth on the 30th June in each year from 1902 to 1911 inclusive is shewn in the following table:—

**GOVERNMENT RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT, 1902 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	N. Ter.	West. Aust.	Tas.	C'wealth.
TOTAL COST (£,000 OMITTED).								
1902	£ 40,565	£ 40,614	£ 20,119	£ 12,826	£ 1,155	£ 7,410	£ 3,841 <sup>1</sup>	£ 126,530
1903	41,655	40,974	20,302	12,952	1,169	8,142	3,884 <sup>1</sup>	129,078
1904	42,289	41,217	20,888	13,068	1,175	8,956	3,901	131,494
1905	43,063	41,279	21,611	13,138	1,173	9,808	3,921	133,093
1906	43,626	41,398	21,741	13,141	1,173	9,966	3,927	134,972
1907	44,700	41,533	21,839	13,254	1,173	10,301	3,944	136,744
1908	45,683	41,929	22,576	13,436	1,173	10,733	3,978	139,511
1909	47,613	42,486	23,395	13,687	1,173	11,017	4,004	143,375
1910	48,925	43,142	24,336	13,880	1,173	11,377	4,049	146,882
1911	50,972	44,122	25,899	14,589	1,173	12,020	4,080	152,855
COST PER MILE OPEN.								
1902	£ 13,405	£ 12,300	£ 7,183	£ 7,338	£ 7,910	£ 5,449	£ 8,313 <sup>1</sup>	£ 9,860
1903	13,270	12,112	7,489	7,453	8,038	5,371	8,406 <sup>1</sup>	9,859
1904	12,889	12,191	7,134	7,525	8,076	5,812	8,445	9,758
1905	13,125	12,162	6,989	7,525	8,066	6,111	8,468	9,762
1906	12,869	12,197	6,931 <sup>*</sup>	7,528	8,066	6,182	8,481	9,719
1907	12,945	12,230	6,962	7,235	8,065	5,840	8,517	9,637
1908	13,158	12,346	6,721	7,151	8,063	5,524	8,591	9,518
1909	13,142	12,459	6,688	7,248	8,063	5,387	8,648	9,512
1910	13,430	12,358	6,647	7,258	8,063	5,374	8,632	9,497
1911	13,555	12,522	6,696	7,539	8,054	5,060	8,676	9,507

1. To the 31st December, 1902 and 1903 respectively.

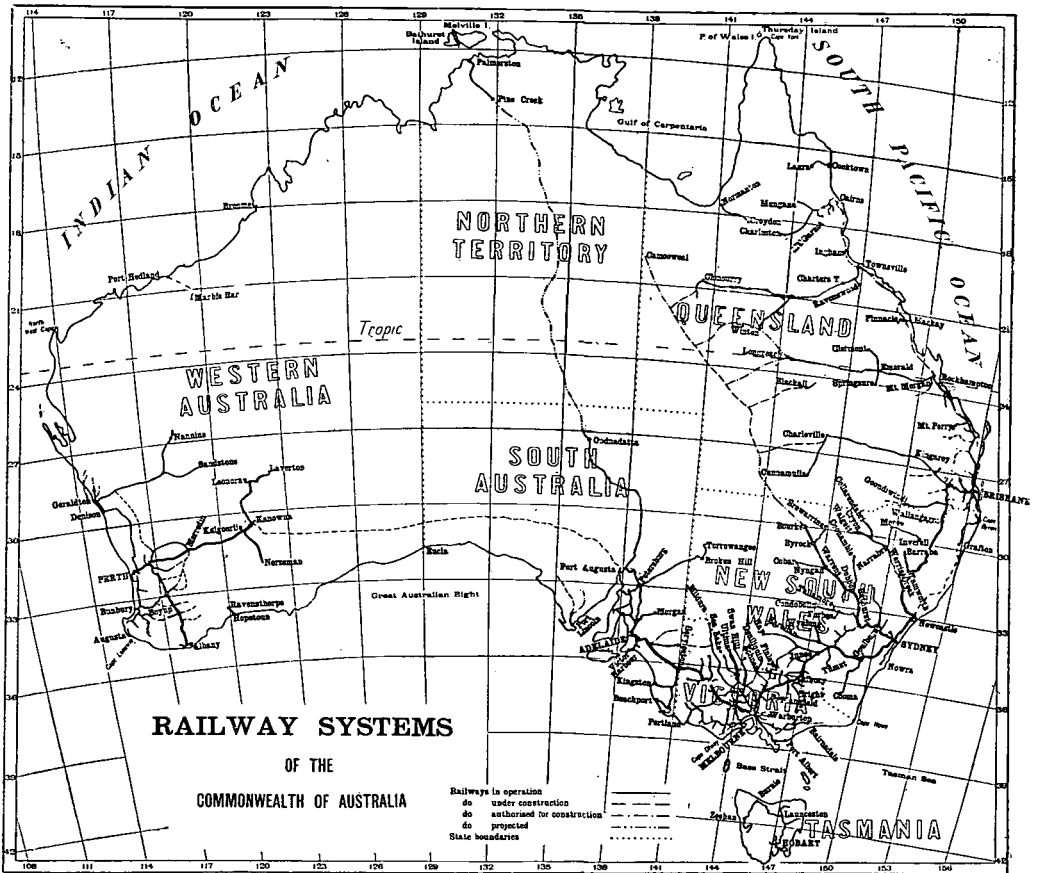
(iv.) *Loan Expenditure on Railways and Tramways, 1902 to 1911.* The subjoined table shews the total loan expenditure on Government railways and tramways (including lines both open and unopen) in each State during each financial year from 1902 to 1908, and on railways only for the years 1908-9 to 1910-11. Figures shewing loan expenditures on railways only are not available for years prior to 1909.

**GOVERNMENT RAILWAYS AND TRAMWAYS.—LOAN EXPENDITURE, 1902 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1902-3	£,000 1,684	£,000. 371	£,000. 696	£,000. 144	£,000. 1,059	£,000. *57	£,000. 4,011
1903-4	806	258	388	120	443	*38	2,053
1904-5	502	172	120	101	348	†19	1,262
1905-6	529	78	158	70	220	6	1,061
1906-7	422	74	555	47	330	15	1,443
1907-8	1,363	250	885	55	306	39	2,898
1908-9†	1,710	544	1,053	241	588	69	4,155
1909-10†	2,064	657	1,263	383	529	100	4,996
1910-11†	2,127	1,230	1,686	591	748	82	6,464

\* For the calendar years 1902 and 1903 respectively. † For the eighteen months ended 30th June, 1905. ‡ Railways only.

## THE GOVERNMENT RAILWAY SYSTEMS OF THE COMMONWEALTH.



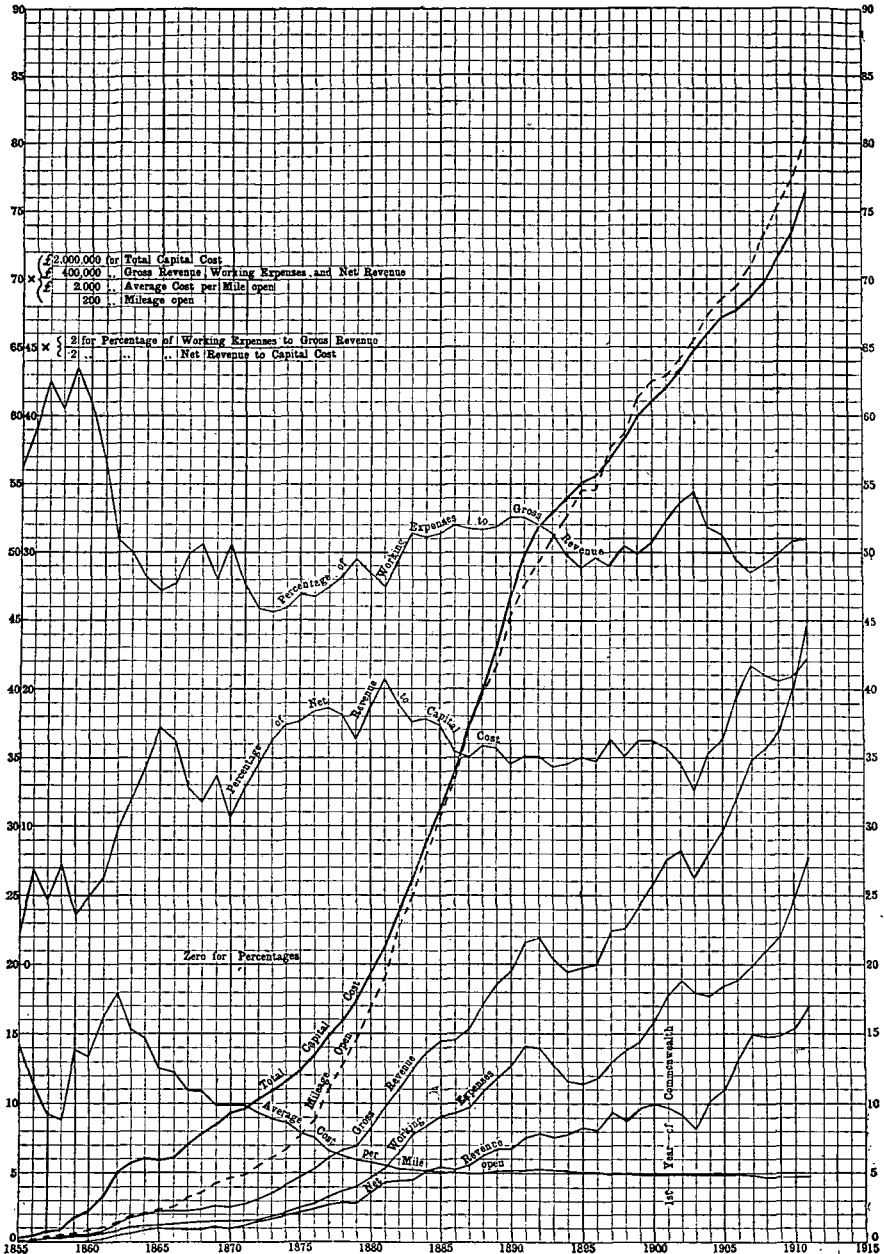
EXPLANATION OF MAP.—The continuous lines denote the existing railway lines of Australia, the heavier lines being the main routes.

Of the two transcontinental lines, viz., one joining the railways of South and Western Australia—and thus connecting continuously by railway Queensland, New South Wales, Victoria, South Australia, and Western Australia, and one connecting Oodnadatta in South Australia with Pine Creek in the Northern Territory, the former has been commenced, and is shewn — — — — —; while the latter, the construction of which is to be deferred for the present, is shewn — — — — —.

## LIST OF PRINCIPAL SECTIONS OF RAILWAYS.

Miles.		Miles.		Miles.	
Townsville to Winton' ...	368	Sydney to Bourke ...	508	Adelaide to Broken Hill ...	334
Townsville to Selwyn ...	552	Sydney to Hay ...	450	" Oodnadatta ...	688
Rockhampton to Longreach	425	" Cooma ...	266	Perth to Laverton ...	586
Brisbane to Cunnamulla... ..	604	" Melb'rne (17 hrs.)	582½	" Meekatharra ...	640
Toowoomba to Newcastle	520	Melb'rne to Adelaide (17½ " )	482½	" Albany ...	340
Brisbane to Sydney (27½ hrs.)	725	" Merbein ...	358	Hobart to Launceston ...	133
Newcastle to Inverell ...	405	" Swan Hill ...	215		

GRAPHS SHEWING THE FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF THE COMMONWEALTH, 1855 TO 1911.



(See pages—total capital cost, 708; mileage open, 693; gross revenue, 713; working expenses 717; net revenue, 720; average cost per mile, 708; percentage of working expenses to gross revenue, 710; percentage of net revenue to capital cost, 720.)

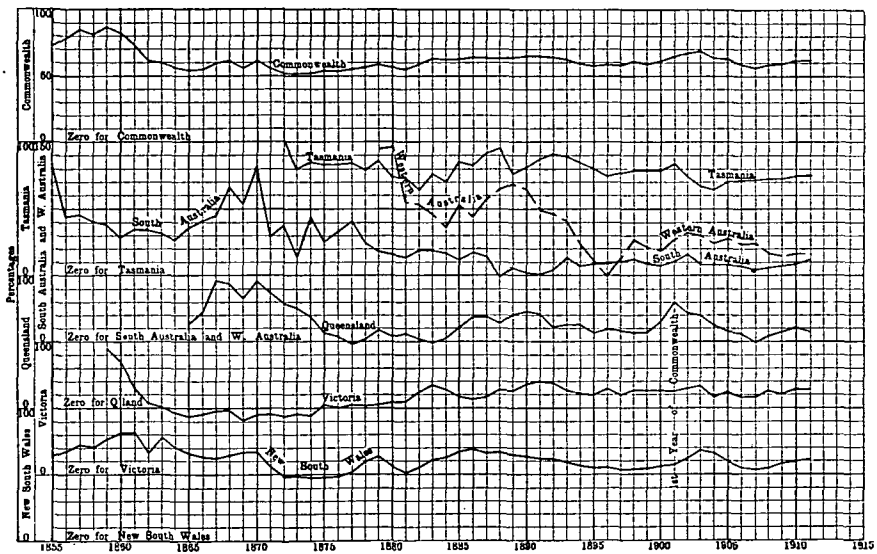
EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The significance of the vertical height of each square varies, however, according to the nature of the several curves.

In the heavy curve denoting the total capital cost of the railways of the Commonwealth, the vertical side of each square denotes £2,000,000.

In the three lighter curves, representing (i.) gross revenue, (ii.) working expenses, and (iii.) net revenue, the vertical height of each single square denotes £400,000. For the curve of average cost per mile open, the vertical side of the small square denotes £2,000. The mileage open is shown by a dotted curve the vertical side of each square representing 200 miles.

For the percentages a new zero is taken at "20" on the scale for the general diagram. The vertical height of each square represents 2 percent. in the curve shewing the percentage of working expenses to gross revenue. For the curve of percentage of net revenue to capital cost, the vertical height of each square represents only 0.2, that is to say, the vertical scale is ten times that of the preceding curve.

GRAPHS SHEWING PERCENTAGES OF WORKING EXPENSES TO GROSS REVENUE FOR  
GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 to 1911.

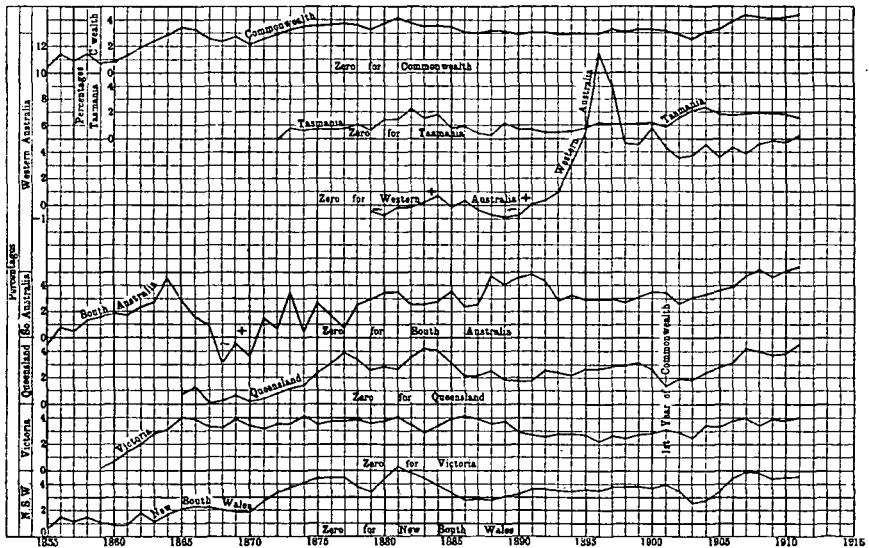


(See page 717.)

EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and the Commonwealth, with, however, one exception, viz., that the zero line for South and Western Australia is identical.

The curve for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government Railway systems of the several States were inaugurated.

GRAPHS SHEWING PERCENTAGES OF NET REVENUE TO CAPITAL COST TO GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 to 1911.



(See page 720.)

EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and for the Commonwealth being different. This was necessary to avoid confusion of the curves.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

The curve for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

The following statement shews the total loan expenditure to the 30th June, 1911 :—

**GOVERNMENT RAILWAYS.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH TO 30th JUNE, 1911.**

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Expenditure ...	52,920,833	41,549,490	27,382,012	15,225,482	12,046,801	4,433,470	153,558,088

\* Including Northern Territory.

**10. Gross Revenue, Total, per Average Mile Worked, and per Train-mile Run, 1902 to 1911.**—The following table shews the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run in each State during each financial year from 1902 to 1911 inclusive :—

**GOVERNMENT RAILWAYS.—GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED, AND PER TRAIN MILE, 1902 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
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**TOTAL GROSS REVENUE (£ ,000 OMITTED).**

	£	£	£	£	£	£	£	£
1901-2 ...	3,669	3,368	1,382	1,085	13	1,521	*233	11,271
1902-3 ...	3,315	3,047	1,234	1,077	11	1,553	*248	10,455
1903-4 ...	3,436	3,438	1,306	1,161	17	1,588	†248	11,194
1904-5 ...	3,684	3,582	1,413	1,273	16	1,610	244	11,822
1905-6 ...	4,235	3,788	1,546	1,350	15	1,634	241	12,809
1906-7 ...	4,710	4,013	1,830	1,375	14	1,537	258	13,937
1907-8 ...	4,944	3,873	1,951	1,741	15	1,502	278	14,301
1908-9 ...	5,028	4,178	2,103	1,639	13	1,509	280	14,750
1909-10 ...	5,486	4,444	2,338	1,841	12	1,637	284	16,042
1910-11 ...	6,042	4,896	2,731	2,045	12	1,844	278	17,848

**GROSS REVENUE PER AVERAGE MILE WORKED.**

	£	£	£	£	£	£	£	£
1901-2 ...	1,242	1,031	493	625	86	1,122	*498	886
1902-3 ...	1,078	914	444	620	78	1,083	*528	806
1903-4 ...	1,066	1,020	462	668	117	1,035	†529	841
1904-5 ...	1,123	1,059	461	730	106	1,027	518	866
1905-6 ...	1,258	1,116	497	773	102	1,017	513	926
1906-7 ...	1,374	1,182	583	868	96	917	549	991
1907-8 ...	1,425	1,141	602	936	99	821	591	993
1908-9 ...	1,412	1,230	611	868	90	765	596	992
1909-10 ...	1,513	1,291	662	972	84	779	600	1,054
1910-11 ...	1,627	1,397	719	1,068	79	807	582	1,127

**GROSS REVENUE PER TRAIN-MILE RUN.**

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2 ...	75.58	71.62	58.55	62.07	99.27	81.00	*61.99	70.74
1902-3 ...	68.89	71.09	59.87	68.53	89.13	80.85	*63.80	69.66
1903-4 ...	79.30	89.96	67.43	74.50	129.38	82.96	†62.79	80.12
1904-5 ...	84.46	95.28	68.98	80.99	120.61	90.18	61.80	84.84
1905-6 ...	85.67	96.79	70.26	83.59	117.37	89.98	61.19	85.99
1906-7 ...	87.28	95.96	71.68	87.23	108.87	83.25	63.15	86.57
1907-8 ...	83.26	89.53	71.40	83.41	111.94	90.93	61.81	83.27
1908-9 ...	80.06	88.81	68.29	79.87	100.85	88.25	65.31	80.74
1909-10 ...	85.12	91.11	68.80	81.49	97.05	89.35	64.33	83.26
1910-11 ...	85.27	90.58	69.96	82.55	90.59	89.19	64.06	83.45

\* For the calendar years 1902 and 1903 respectively.

† Estimated for a period of twelve months ended the 30th June, 1904.

**11. Coaching, Goods, and Miscellaneous Receipts, 1902 to 1911.**—The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and slave stock, and (c) rents and miscellaneous items. The subjoined table shews the gross revenue, during the years 1902 to 1911 inclusive, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph hereof.

## COACHING, GOODS, AND MISCELLANEOUS RECEIPTS, 1902 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	North'n Terrtry.†	W. Aust.	Tas.*	C'wealth.
COACHING TRAFFIC RECEIPTS (£ ,000 OMITTED).								
	£	£	£	£	£	£	£	£
1901-2	1,368	1,580	435	373	...	443	110	4,309
1902-3	1,371	1,525	430	345	...	450	116	4,237
1903-4	1,405	1,562	456	370	...	435	†119	4,397
1904-5	1,428	1,598	478	383	...	503	118	4,508
1905-6	1,563	1,720	529	405	...	507	121	4,845
1906-7	1,736	1,863	614	455	...	497	129	5,294
1907-8	1,850	1,936	672	515	...	483	137	5,593
1908-9	2,008	2,041	730	533	...	489	138	5,939
1909-10	2,124	2,143	816	586	...	507	139	6,315
1910-11	2,386	2,355	935	650	4	596	144	7,070

## GOODS AND LIVE STOCK TRAFFIC RECEIPTS (£ ,000 OMITTED).

1901-2	2,264	1,720	862	689	...	1,037	116	6,688
1902-3	1,908	1,455	767	710	...	1,047	121	6,008
1903-4	1,990	1,793	810	773	...	1,067	†120	6,553
1904-5	2,213	1,919	900	870	...	1,061	117	7,080
1905-6	2,628	2,001	983	920	...	1,081	111	7,724
1906-7	2,923	2,081	1,181	1,092	...	992	120	8,389
1907-8	3,043	1,868	1,251	1,193	...	974	132	8,461
1908-9	2,965	2,067	1,347	1,067	...	974	134	8,554
1909-10	3,291	2,222	1,500	1,215	...	1,066	134	9,428
1910-11	3,585	2,458	1,772	1,341	5	1,174	124	10,459

## MISCELLANEOUS RECEIPTS (£ ,000 OMITTED).

1901-2	37	68	84	36	...	42	7	274
1902-3	36	67	37	33	...	57	10	240
1903-4	41	83	39	34	...	37	†9	243
1904-5	43	65	35	37	...	46	8	234
1905-6	43	67	34	40	...	46	9	239
1906-7	50	69	35	42	...	48	9	253
1907-8	51	70	28	47	...	45	9	250
1908-9	56	70	26	52	...	45	8	257
1909-10	71	79	22	52	...	64	11	299
1910-11	71	83	24	54	3	74	10	319

\* Tasmanian figures for 1902 and 1903 are for years ended the 31st December. † For twelve months ended 30th June, 1904. ‡ Including Northern Territory up to year 1909-10. § Included in South Australia up to year 1909-10.

(i.) *New South Wales.* In New South Wales, owing, no doubt, to the reductions made in rates and fares in recent years, and to the general prosperity of the State, the traffic receipts continue to shew substantial development, the total earnings for the past year having amounted to £6,042,205, an increase over the previous year of £556,490. The increases occurred in all branches of passenger and goods traffic, except in live stock, hay, straw, and chaff, which shewed a decrease of £14,228.

(ii.) *Victoria.* In Victoria each sub-division of traffic shewed an increase over the figures for the previous year and was also higher than in any previous year. The most notable increases were in goods and minerals (£235,297, or 10.59 per cent.), and passengers (£190,935, or 10.20 per cent.).

(iii.) *Queensland.* In Queensland the increase in 1910-11 in gross earnings, £391,962 above 1909-10, is to some extent accounted for by the opening of new lines, but it is stated that the expansion of traffic upon the older established lines has been enormous. The chief increases in earnings were in respect of passengers (£95,554, or 14.85 per cent.), general merchandise (£126,735, or 16.82 per cent.), live stock (£34,491, or 17.16 per cent.), and wool (£17,116, or 7.98 per cent.).



(iv.) *South Australia.* In this State the increase for the year 1910-11 in coaching traffic receipts amounted to £59,497; there were also considerable increases in respect of minerals (£50,510); wheat (£10,451); and live stock (£10,736).

(v.) *Western Australia.* In this State the earnings in 1910-11 shewed an increase, as compared with 1909-10. What may be regarded as personal traffic rendered an additional amount of £87,683, giving evidence of increased activity in business and pleasure, while goods and live stock returned £111,874 more than the previous year. Miscellaneous receipts were £3,634 higher than in the previous year.

(vi.) *Tasmania.* The gross revenue in 1910-11 shews a decrease of £6148 as compared with the previous year. Passenger traffic receipts afford an increase of £4798. The decrease in goods traffic receipts, £9941, is due to the abnormal quantity of coal carried in 1909-10 owing to the coal strike in New South Wales, the shortage in crops, and the closing down of the smelters at Zeehan.

The following table shews for the year 1910-11 the percentage which each class of receipts bears to the total gross revenue:—

**PERCENTAGE OF REVENUES FROM VARIOUS SOURCES ON TOTAL REVENUE,  
1910-11.**

Particulars.	N.S.W.	Vic.	Qld.	S.A.	N. Ter.	W.A.	Tas.	C'wlth.
	%	%	%	%	%	%	%	%
Coaching traffic receipts ...	39.48	48.09	34.23	31.79	30.46	32.34	51.86	39.61
Goods and live stock traffic receipts ...	59.34	50.20	64.89	65.56	46.40	63.66	44.75	58.60
Miscellaneous receipts ...	1.18	1.71	0.88	2.65	23.14	4.00	3.39	1.79

**12. Coaching Traffic Receipts per Average Mile Worked, per Passenger-train Mile, and per Passenger Journey.**—The subjoined table shews the receipts from coaching traffic per average mile of line worked, per passenger-train mile, and per passenger journey in each State and in the Commonwealth for the year ended the 30th June, 1911:—

**GOVERNMENT RAILWAYS.—COACHING TRAFFIC RECEIPTS PER MILE WORKED,  
PER PASSENGER-TRAIN MILE, AND PER PASSENGER JOURNEY, 1910-11.**

State.	Number of Passenger-Train Miles.*	Number of Passenger Journeys.	Coaching Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Passenger-Train Mile.	Per Passenger Journey.
	No. ,000.	No. ,000	£ ,000.	£	d.	d.
New South Wales ...	8,093	60,920	2,386	643	70.74	9.40
Victoria ...	6,781	93,796	2,355	672	83.35	6.03
Queensland ...	2,659	14,791	935	246	84.36	15.16
South Australia† ...	2,405	16,620	641	335	64.04	9.27
Northern Territory ...	10	2	4	24	82.43	380.94
Western Australia ...	2,415	14,828	596	261	59.30	9.66
Tasmania ...	381	1,682	144	302	90.72	20.56
Commonwealth	22,744	202,639	7,061	446	74.54	8.36

\* The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States:—

New South Wales ...	1,582,982	Western Australia ...	951,315
Victoria ...	2,642,624	Tasmania ...	696,653
South Australia ...	740,533		

† Excluding the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911.

The above table shews that, in the several States, there is a considerable difference in the amount of the average receipts per passenger journey. Disregarding the Northern Territory, this amount ranges from 6.03 pence in Victoria, where there is a large metropolitan suburban traffic, to 20.56 pence in Tasmania. The difference in these amounts cannot be accounted for by the amounts of rates charged, which are fairly uniform in the several States (see paragraph 20 hereof), but is largely due to the different traffic conditions which prevail on various lines in the Commonwealth (see paragraph 17 hereof). In order to adequately analyse these figures it would be necessary to have particulars regarding the number of passenger-miles, *i.e.*, the total distance travelled by passengers, in each State, which particulars are not generally available (see paragraph 18 hereof).

The preponderance in the number of passenger journeys in Victoria is accounted for, to a great extent, by the large number of metropolitan suburban passengers in that State. Of the total number of passengers carried in Victoria, 86,476,657 were metropolitan suburban passengers, *i.e.*, were carried between stations within twenty miles of Melbourne, while in New South Wales the number of suburban passengers (between stations within thirty-four miles of Sydney and Newcastle, and including Richmond and Braxton lines) was 54,103,048. In Sydney a large proportion of the metropolitan suburban traffic is carried on the electric and steam tramways, the number of passenger journeys during the year 1910-11 being 217,523,548. In Melbourne, on the other hand, the number of passengers carried on the cable tramways systems during the same period was 76,295,825; and on the St. Kilda-Brighton, Prahran-Malvern and the North Melbourne tramways was 7,344,817, making a total of 83,640,642, which is not as great as the number carried on the metropolitan suburban railways in Melbourne. This matter is referred to hereinafter. (See paragraph 17.)

**13. Goods and Live-Stock Traffic Receipts per Mile Worked, per Goods-train Mile, and per Ton Carried.**—The following table shews the gross receipts from goods and live-stock traffic per mile worked, per goods-train mile, and per ton carried for the year ended the 30th June, 1911:—

**GOVERNMENT RAILWAYS.—GOODS AND LIVE STOCK TRAFFIC RECEIPTS PER MILE WORKED, PER GOODS-TRAIN MILE, AND PER TON CARRIED, 1911.**

State.	Number of Goods-Train Miles. *	Goods and Live-Stock Tonnage.	Goods and Live-Stock Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Goods-Train Mile.	Per Ton Carried.
	No. ,000.	Tons ,000.	£ ,000.	£	d.	d.
New South Wales ...	8,913	10,355	3,586	966	96.54	83.10
Victoria ...	6,192	4,968	2,458	701	95.26	118.74
Queensland ...	6,709	3,295	1,772	467	63.39	129.05
South Australia† ...	3,451	2,731	1,322	691	91.96	116.19
Northern Territory...	20	2	5	37	63.19	631.77
Western Australia ...	2,549	2,489	1,174	514	110.57	113.22
Tasmania...	660	364	124	260	45.24	82.06
Commonwealth ...	28,494	24,204	10,441	659	87.95	103.53

\* The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States:—

New South Wales ...	1,582,982	Western Australia ...	951,315
Victoria ...	2,642,628	Tasmania ...	696,653
South Australia ...	740,533		

† Excluding the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911.

From the above table it may be seen that, disregarding the Northern Territory, the average amount of freight paid per ton ranges from 82.06 pence in Tasmania to 129.05

pence in Queensland. The remarks made in the preceding paragraph (12) hereof with regard to the average fare paid per passenger and to passenger-miles, apply equally to the average amount of freight paid per ton and to ton-miles.

**14. Working Expenses.**—In order to make an adequate comparison of the working expenses of the Government railways in the several States, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—i.e., a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little back-loading. Further, though efforts have been made from time to time to obtain a uniform system of accounts in the several States, the annual reports of the Commissioners do not yet comprise fully comparable data of railway expenditure.

The following table shews the total annual expenditure, comprising expenses on (a) maintenance of way, works, and buildings; (b) locomotive power—repairs and renewals; (c) carriages and wagons—repairs and renewals; (d) traffic expenses; (e) compensation; and (f) general and miscellaneous charges; and also the percentage of these expenditures upon the corresponding gross revenues in each State from 1902 to 1911:—

**GOVERNMENT RAILWAYS.—TOTAL WORKING EXPENSES AND PERCENTAGES OF WORKING EXPENSES UPON GROSS REVENUES, 1902 to 1911.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
TOTAL WORKING EXPENSES (£,000 OMITTED).								
	£	£	£	£	£	£	£	£
1901-2	2,267	2,166	993	690	35	1,256	173	7,590
1902-3	2,266	2,032	863	625	13	1,248	166	7,313
1903-4	2,259	2,022	812	675	13	1,180	166	7,127
1904-5	2,192	2,222	815	737	13	1,256	172	7,407
1905-6	2,309	2,316	863	764	14	1,202	173	7,541
1906-7	2,500	2,353	913	868	13	1,136	185	7,968
1907-8	2,715	2,436	1,054	969	14	1,008	202	8,398
1908-9	2,953	2,515	1,227	940	13	974	204	8,826
1909-10	3,276	2,818	1,414	1,069	13	1,097½	212	9,899
1910-11	3,691	3,099	1,563	1,256½	13	1,216½	216	11,054
PERCENTAGE OF WORKING EXPENSES TO GROSS EARNINGS.								
	%	%	%	%	%	%	%	%
1901-2	61.80	64.32	71.83	63.54	276.70	82.58	74.31	67.25
1902-3	68.37	66.69	69.95	58.01	113.40	80.33	76.16	68.80
1903-4	65.74	58.82	62.19	58.19	77.73	74.28	76.68	63.62
1904-5	59.50	62.04	57.64	57.86	84.70	78.01	70.47	62.05
1905-6	54.51	58.51	55.84	56.63	93.00	73.53	71.56	58.87
1906-7	53.08	58.65	49.88	55.10	94.74	73.89	71.84	57.18
1907-8	54.91	62.89	54.01	55.68	97.22	67.10	72.70	58.71
1908-9	58.72	60.19	58.35	57.39	99.52	64.56	72.89	59.84
1909-10	59.73	63.41	60.48	58.09	101.53	66.99	74.52	61.70
1910-11	61.09	63.30	57.25	61.39½	113.67	65.95	77.55	61.94

\* Including amounts paid for pensions and gratuities, and also special expenditures and charges for belated repairs and in reduction of deficiencies as follows:—For the year 1901-2, £115,244; for 1902-3, £196,137; for 1903-4, £220,092; for 1904-5, £351,141; for 1905-6, £217,179; for 1906-7, £276,630; and for 1907-8, £150,122. † For the calendar years 1902 and 1903 respectively. ‡ Estimated for a period of twelve months ended the 30th June, 1904. § Excluding the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911. || Including the cost of the replacement of rolling stock destroyed by fire (£22,649 in 1909-10 and £12,657 in 1910-11).

(i.) *New South Wales.* In this State the total working expenses in 1910-11 amounted to £3,691,061, an increase of £414,652 over the previous year. This increase was mainly owing to the large additional traffic, heavy repairs, and increased rates of pay to the staff.

(ii.) *Victoria.* In Victoria the increase in working expenses, £281,629, was mainly due to the greater traffic, to reductions in working hours and advances in salaries and wages of the staff, to a large contribution to the accident and fire insurance fund, to the

payment of £50,000 on renewals of rails, sleepers, and ballast, and extra expenditure in connection with additions and improvements.

(iii.) *Queensland.* In this State the working expenses increased from £1,414,271 (60.48 per cent.) in 1909-10 to £1,563,119 (57.25 per cent.) in 1910-11. The reduction in the percentage of working expenses is one not expected to continue on account of the increase of salaries and wages, and of the expenditure which is being incurred by the additional mileage in course of construction.

(iv.) *South Australia.* In South Australia (proper) the working expenses in 1910-11 shewed an increase of £186,449, viz., from £1,069,140 to £1,255,589. This was to a large extent due to augmented wages and extraordinary expenditure.

(v.) *Western Australia.* The cause of the increased expenditure (£119,569) in 1910-11 as compared with 1909-10, is mainly due to increased train mileage.

(vi.) *Tasmania.* The working expenses in 1910-11 were £215,530 as compared with £211,677 in the previous year, being an increase of £3853.

From the preceding table it may also be seen that during the last four financial year there have been for the whole Commonwealth increases in the percentages of working expenses to gross earnings. This increase is partly due to the fact that in four of the States, consequent on the favourable results of previous years, reductions were made in passenger fares and freight rates.

(vii.) *Working Expenses per Average Mile Worked and per Train Mile Run, 1902 to 1911.* The following table shews the working expenses per average mile worked and per train mile run in each State for the years 1902 to 1911 inclusive:—

**GOVERNMENT RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED, AND PER TRAIN MILE RUN, 1902 to 1911.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	Cwlth.
WORKING EXPENSES PER AVERAGE MILE WORKED.								
1901-2	£ 768	£ 663	£ 354	£ 397	£ 238	£ 927	£ 370	£ 596
1902-3	737	609	311	360	88	870	355	556
1903-4	701	560	287	389	91	768	354	536
1904-5	668	657	266	422	90	801	365	542
1905-6	686	653	278	438	95	748	367	545
1906-7	729	693	291	478	91	678	395	566
1907-8	783	717	325	521	97	551	429	583
1908-9	829	740	356	500	87	494	434	594
1909-10	904	819	400	565	86	522	447	651
1910-11	994	884	412	656	90	532	451	698
WORKING EXPENSES PER TRAIN MILE RUN.								
1901-2	d. 46.71	d. 46.07	d. 42.05	d. 39.44	d. 274.67	d. 66.89	d. 46.06	d. 47.58
1902-3	47.10	47.41	41.88	39.75	101.07	64.95	42.85	47.92
1903-4	52.13	52.92	41.93	43.35	100.57	61.62	42.05	51.01
1904-5	50.26	59.11	39.76	46.87	102.16	70.34	43.55	53.15
1905-6	46.70	56.63	39.23	47.34	109.15	66.16	43.79	50.62
1906-7	46.33	56.28	35.75	48.06	103.14	65.21	45.36	49.50
1907-8	45.72	56.31	38.56	46.44	108.83	61.01	47.12	48.89
1908-9	47.01	53.46	39.84	45.84	100.37	56.98	47.60	48.32
1909-10	50.84	57.77	41.61	47.34	98.54	59.86	47.94	51.38
1910-11	52.09	57.34	40.05	50.68	102.98	58.82	49.68	51.69

\* Including special expenditure and charges referred to in paragraph 14 hereof. † For the calendar years 1902 and 1903 respectively. ‡ Estimated for a period of twelve months ended the 30th June, 1904.

15. **Distribution of Working Expenses, 1902 to 1911.**—The subjoined table shows the distribution of working expenses, among four chief heads of expenditure, for each year from 1902 to 1911 inclusive:—

**GOVERNMENT RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES, 1902 to 1911.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
MAINTENANCE (£,000 OMITTED).								
1901-2	522	490	356	167	29	247	158	1,869
1902-3	487	438	293	139	7	265	152	1,681
1903-4	519	449	278	164	7	265	149	1,731
1904-5	491	502	278	207	7	344	55	1,884
1905-6	540	572	288	203	8	293	54	1,953
1906-7	593	589	295	274	7	266	58	2,082
1907-8	622	649	323	313	8	226	62	2,203
1908-9	628	626	395	270	7	210	62	2,198
1909-10	699	644	441	289	7	243	64	2,387
1910-11	810	803	500	343	8	272	66	2,802

**LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES (£,000 OMITTED).**

1901-2	1,060	845	390	344	3	670	164	3,376
1902-3	1,090	763	344	317	3	643	162	3,222
1903-4	1,054	720	318	343	4	582	164	3,085
1904-5	1,024	763	314	380	3	577	63	3,104
1905-6	1,057	788	337	386	3	567	66	3,204
1906-7	1,132	845	358	405	3	535	73	3,351
1907-8	1,250	956	417	442	4	484	81	3,634
1908-9	1,409	993	477	441	4	472	81	3,877
1909-10	1,616	1,226	562	512	3	545	85	4,549
1910-11	1,771	1,264	604	585	3	533	85	4,905

**TRAFFIC EXPENSES (£,000 OMITTED).**

1901-2	589	672	226	163	2	306	142	2,000
1902-3	605	593	207	152	2	312	143	1,914
1903-4	602	586	197	152	2	307	143	1,899
1904-5	596	563	205	153	2	302	44	1,865
1905-6	631	588	218	158	2	305	45	1,947
1906-7	683	593	238	172	2	301	46	2,035
1907-8	742	613	290	166	2	270	50	2,163
1908-9	805	641	330	210	2	264	51	2,303
1909-10	852	684	385	242	2	282	52	2,499
1910-11	968	767	429	302	1	317	54	2,838

**OTHER CHARGES (£,000 OMITTED).**

1901-2	97	158	21	17	...	41	18	334
1902-3	85	239	20	16	...	27	19	396
1903-4	84	268	19	16	...	27	19	423
1904-5	81	395	18	17	...	33	10	554
1905-6	80	268	20	17	...	37	9	431
1906-7	91	326	21	18	...	35	9	500
1907-8	102	218	23	19	...	27	9	398
1908-9	110	254	25	21	...	28	10	448
1909-10	109	264	26	26	1	27	11	464
1910-11	142	265	30	26	1	34	11	509

\* Including special expenditure and charges referred to in paragraph 14 hereof. † For the calendar years 1902 and 1903 respectively. ‡ Estimated for a period of twelve months ended the 30th June, 1904.

16. **Net Revenue, Total and per Cent. of Capital Cost, 1902 to 1911.**—The table given hereunder shows the net sums available to meet interest charges, and also the percentage of such sums upon the capital cost of construction and equipment, in each State for the years 1902 to 1911 inclusive:—

**GOVERNMENT RAILWAYS.—NET REVENUE AND PERCENTAGE OF NET REVENUE  
UPON CAPITAL COST, 1902 to 1911.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'with
NET REVENUE (£,000 OMITTED).								
	£	£	£	£	£	£	£	£
1901-2 ...	1,401	1,202	389	396	—22	265	160	3,691
1902-3 ...	1,049	1,015	371	452	— 2	306	181	3,272
1903-4 ...	1,177	1,416	494	485	4	408	182	4,066
1904-5 ...	1,492	1,360	599	536	2	354	72	4,415
1905-6 ...	1,926	1,571	683	585	1	433	69	5,268
1906-7 ...	2,210	1,659	917	707	1	401	73	5,968
1907-8 ...	2,229	1,438	897	772	...	494	76	5,906
1908-9 ...	2,076	1,663	876	698	...	535	76	5,924
1909-10 ...	2,209	1,626	924	771	...	541	72	6,143
1910-11 ...	2,351	1,797	1,167	789	—1	628	62	6,793

**PERCENTAGE OF NET REVENUE TO CAPITAL EXPENDITURE.**

	%	%	%	%	%	%	%	%
1901-2 ...	3.45	2.96	1.94	2.98	—1.91	3.58	1.56	2.92
1902-3 ...	2.52	2.48	1.83	3.37	—0.13	3.75	12.09	2.53
1903-4 ...	2.78	3.43	2.36	3.59	0.32	4.56	12.10	3.09
1904-5 ...	3.46	3.29	2.77	3.95	0.20	3.61	1.83	3.30
1905-6 ...	4.42	3.80	3.14	4.30	0.09	4.34	1.75	3.90
1906-7 ...	4.94	4.00	4.20	5.16	0.06	3.90	1.84	4.36
1907-8 ...	4.88	3.43	3.97	5.57	0.03	4.60	1.91	4.23
1908-9 ...	4.36	3.91	3.74	5.10	...	4.85	1.90	4.13
1909-10 ...	4.52	3.77	3.80	5.56	...	4.75	1.79	4.18
1910-11 ...	4.61	4.07	4.51	5.41	—0.13	5.22	1.53	4.44

\* In addition to ordinary working expenses, special expenditures and charges paid out of each year's gross revenue have been deducted; see paragraph 14 above. † For the calendar years 1902 and 1903 respectively. ‡ Partly estimated.

(i.) *Net Revenue per Average Mile Worked and per Train Mile Run, 1902 to 1911.*  
Tables shewing the gross earnings and the working expenses per average mile worked and per train mile run have been given above. The net earnings, i.e., the excess of gross earnings over working expenses, per average mile worked and per train mile run are shewn in the following tables:—

**GOVERNMENT RAILWAYS.—NET REVENUE PER AVERAGE MILE WORKED AND  
PER TRAIN MILE RUN, 1902 to 1911.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
NET REVENUE PER AVERAGE MILE WORKED.								
	£	£	£	£	£	£	£	£
1901-2 ...	475	368	139	228	—152	195	128	290
1902-3 ...	341	304	134	260	— 10	213	173	252
1903-4 ...	365	420	175	279	26	266	174	306
1904-5 ...	455	402	195	308	16	226	153	323
1905-6 ...	572	463	220	335	7	269	146	381
1906-7 ...	645	489	292	390	5	239	155	424
1907-8 ...	643	423	277	415	2	270	161	410
1908-9 ...	583	490	254	371	...	271	162	398
1909-10 ...	609	473	262	407	...	257	153	404
1910-11 ...	633	513	308	412	— 11	275	131	429

\* See footnote \* to preceding table.

GOVERNMENT RAILWAYS.—NET REVENUE PER AVERAGE MILE WORKED AND  
PER TRAIN MILE RUN, 1902 to 1911.—Continued.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'wealth.
NET REVENUE PER TRAIN MILE RUN.								
	d.	d.	d.	d.	d.	d.	d.	d.
1901-2 ...	28.87	25.56	16.50	22.53	—175.40	14.11	†15.93	23.16
1902-3 ...	21.79	23.68	17.99	28.78	—11.94	15.91	†20.95	21.74
1903-4 ...	27.17	37.04	25.49	31.15	28.81	21.34	†20.74	29.10
1904-5 ...	34.20	36.17	29.22	34.11	18.45	19.83	18.25	31.69
1905-6 ...	38.97	40.16	31.02	36.25	8.22	23.82	17.40	35.37
1906-7 ...	40.95	39.68	35.93	39.17	5.73	23.04	17.78	37.07
1907-8 ...	37.54	33.22	32.83	36.97	3.11	29.92	17.69	34.38
1908-9 ...	33.05	35.36	28.44	34.03	0.48	31.28	17.70	32.43
1909-10 ...	34.28	33.34	27.19	34.15	...	29.49	16.39	31.89
1910-11 ...	33.18	33.24	29.91	31.87	—12.39	30.37	14.38	31.77

† See footnote † to preceding table. ‡ Partly estimated.

17. **Traffic Conditions.**—Reference has already been made to the difference in the traffic conditions on many of the lines of the Commonwealth (see paragraphs 12, 13, and 14 hereof). These conditions differ not only in the several States, but also on different lines in the same State, and this is true with regard to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the more remote interior districts traffic is light; the density of population diminishes rapidly as the coastal regions are left behind; there is a corresponding diminution in the volume of traffic, while, in comparison with other more settled countries, there is but little back-loading.

As an indication of the different traffic conditions prevailing in the several States, the following table is given shewing the numbers of passenger journeys and the tons of goods carried (a) per 100 of the mean population; and (b) per average mile worked of each State during the financial year 1910-11:—

PASSENGER JOURNEYS AND TONNAGE OF GOODS AND LIVE STOCK, 1910-11.

Particulars.		N.S.W.	Vic.	Q'land.	S.A.*	N.T.	W.A.	Tas.	C'wlth
(a) PER 100 OF MEAN POPULATION.									
Passenger journeys ...	No.	3,706	7,207	2,469	4,050	67	5,357	868	4,515
Goods and live stock ...	Tons	630	382	550	666	62	900	188	539
(b) PER AVERAGE MILE OF LINE WORKED.									
Passenger journeys ...	No.	16,407	26,761	3,897	8,679	15	6,487	3,520	12,795
Goods and live stock ...	Tons	2,789	1,417	863	1,426	14	1,089	761	1,528

\* Exclusive of the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911.

Particulars of the actual numbers of passengers and tons of goods and live stock carried have already been given (see paragraph 5 hereof).

(i.) *Metropolitan and Country Passenger Traffic.* A further indication of the difference in passenger traffic conditions might be obtained from a comparison of the volume of metropolitan, suburban, and country traffic in each State. Particulars are, however, available only for the States of New South Wales and Victoria. The subjoined table shews the number of metropolitan and country passengers carried in each of the States mentioned and the revenue derived therefrom during the year 1910-11:—

## METROPOLITAN, SUBURBAN, AND COUNTRY PASSENGER TRAFFIC, 1910-11.

Particulars.	Number of Passenger Journeys.			Revenue.		
	Metropolitan.	Country.	Total.	Metropolitan.	Country.	Total.
N.S.W. ...	*54,103,048	6,816,580	60,919,628	*£626,166	£1,448,694	£2,074,860
Vic. ...	†86,476,657	7,319,149	93,795,806	†846,619	1,217,097	2,063,716

\* Within 34 miles of Sydney and Newcastle, and including Richmond and Braxton lines.

† Within 20 miles of Melbourne.

From this table it may be seen that the number of passenger-journeys in country districts in Victoria is only slightly greater than the corresponding number in New South Wales, while the number of metropolitan passenger-journeys in Victoria is far greater than in New South Wales, although in the latter State both Sydney and Newcastle are included. In Sydney a larger proportion of the suburban traffic is carried by the tramway systems than in Melbourne.

(ii.) *Goods Traffic.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities carried on the Government railways are available for all the States except Tasmania; information regarding the revenue derived from each class of commodity is not, however, generally available in a comparable form. In this connection it may be stated that the following resolution was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May 1909 (see paragraph 1, page 688 hereof):—"That in view of the variations in the character and classification of the goods traffic in the different States the sub-divisions of tonnage carried and revenue in each State shall be those which best suit local conditions."

The following table shews the number of tons of various representative commodities carried, and the percentage of each class on the total tonnage carried during the financial year 1910-11:—

## CLASSIFICATION OF COMMODITIES CARRIED, 1910-11.

State or Territory.*	Minerals.	Fire-wood.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Com-mo-dities.	Total.
TONS CARRIED.								
New South Wales ...	Tons. 46,346,460	Tons. 249,898	Tons. 1,787,632	Tons. 204,508	Tons. 137,599	Tons. 485,021	Tons. 1,843,678	Tons. 10,054,796
Victoria ...	714,295	543,834	1,011,917	219,431	80,824	380,723	2,016,603	4,967,627
Queensland ...	1,215,692	245,737	133,847	201,702	64,607	266,634	1,267,074	3,295,293
South Australia**	1,327,825	116,709	462,276	61,312	26,538	92,777	643,920	2,731,357
Western Australia	427,935	704,808	177,765	30,299	6,753	62,053	1,019,231	2,488,844
North'n Territory...	560	††	†† 5	††	...	43	1,424	2,032
PERCENTAGE ON TOTAL TONNAGE CARRIED.								
New South Wales ...	% 463.11	% 2.49	% 17.84	% 2.03	% 1.37	% 4.82	% 18.34	% 100.00
Victoria ...	114.38	10.95	120.37	4.42	1.63	7.66	40.59	100.00
Queensland ...	36.89	7.46	11.03	16.12	1.96	8.09	38.45	100.00
South Australia**	48.61	4.27	16.92	2.25	0.97	3.40	23.58	100.00
Western Australia	17.20	28.52	7.14	3.63	0.27	2.49	40.95	100.00
North'n Territory...	27.56	††	110.24	††	...	2.12	70.08	100.00

\* Tasmanian figures are not available. † Exclusive of 300,769 tons of coal, on which only shunting and haulage are collected. ‡ Coal, stone, gravel, and sand. § Flour only. ¶ Sugar cane. \*\* Up journey. \*\*\* Exclusive of the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911. †† Included in all other commodities. ‡‡ Grain only. §§ Including Bran, Sharps and Pollard. || Excluding free tonnage.



18. **Passenger-Mileage and Ton-Mileage.**—The useful comparisons and analyses which can be made with regard to the operations of the Government railways in the Commonwealth are to some extent limited, by the absence in the annual reports of the Railway Departments of some of the States, of particulars relating to "passenger-mileage" (i.e., the total distance travelled by passengers) and "ton-mileage" (i.e., the total distance for which goods and live stock are carried), and it is not possible to furnish totals for the Commonwealth in respect of these important particulars. The matter of passenger-mileage and ton-mileage has already been referred to (see page 689). The following resolution in regard thereto was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May, 1909:—"That, in view of the differing conditions in each State, and of the expense involved, it is undesirable to include passenger-mile and ton-mile statistics in the annual reports." The general question as to the desirability of collecting and publishing "passenger-mile" and "ton-mile" statistics by railway companies in the United Kingdom has been made the subject of inquiry by a departmental committee appointed by the President of the Board of Trade. The report of this committee has been published in England as a parliamentary paper.<sup>1</sup>

Information regarding "passenger-miles" and "ton-miles" is available either wholly, or in part, for four of the States only, viz., New South Wales, South Australia, Western Australia, and Tasmania, but is not available at all for either Victoria or Queensland. Of the four States which give particulars of the nature indicated, New South Wales is the only one which furnishes the information in a classified form according to class of passengers and nature of commodities carried. The other three States supply particulars for all classes of passengers and goods together respectively. The mere record of the total number of passenger-miles and ton-miles for all classes of passengers and for all classes of goods respectively, although of considerable value, would appear to be insufficient to enable the whole field of railway operations to be adequately analysed, or the extent to which efficiency has been secured and improvements in working have been effected to be accurately gauged.

(i.) *Passenger-Miles.* Particulars for the whole of the Commonwealth period regarding total "passenger-miles" are available for one State only, namely, Tasmania. For the same period in New South Wales, but exclusive of 1911, particulars are only available for suburban and extended-suburban traffic—i.e., including all stations within 22 miles of Newcastle, within 34 miles of Sydney, and including Richmond and Brantxon. For South Australia particulars are available for each year since 1904. No particulars are available for other States. In the tables given below the average number of passengers carried per "train," etc., is obtained by dividing the number of "passenger-miles" by the number of "passenger-train-miles." The averages given for New South Wales are naturally smaller than those for the other States, since the figures for New South Wales refer to suburban and extended-suburban traffic only.

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1. See Cd. 4697. This report is also published at length in "The Statist," London, 19th June, 1909, Vol. LXII., No. 1634. In this report it is stated that ton-mile statistics have been used in India for forty years and for a longer period in America. They are now compiled by the railways of nearly all foreign countries; in England, however, they are not generally compiled. Among the more important statistics deduced from ton-miles and passenger-miles the following are mentioned:—(a) The average Train Load of goods and of passengers, obtained by dividing the ton-mileage and the passenger-mileage respectively by the train-mileage. (b) The average Wagon Load and Carriage Load, obtained by dividing the ton-mileage by the wagon-mileage and the passenger-mileage by the carriage-mileage. (c) Ton-miles per Engine Hour. (d) The average Length of Haul for goods and passengers respectively, obtained by dividing the ton-mileage and the passenger-mileage by the tonnage and the total number of passengers conveyed. (e) The average Receipts per Ton per Mile and per Passenger per Mile, obtained by dividing the goods receipts by the ton-mileage and the passenger receipts by the passenger-mileage. (f) The average Density of Traffic per mile of road or per mile of track, obtained by dividing the ton-mileage and passenger-mileage by the length of road or by the length of track.

## SUMMARY OF "PASSENGER MILES," 1902 to 1911.

Year ended the 30th June.	Passenger Train Mileage.	Number of Passenger Journeys.	Total Passenger Miles.	Amount Received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger-journey.	Average Receipt per Passenger-mile.	Average Fare per Passenger-journey.
	Miles.	No. (,000 omitted).	No. (,000 omitted).	£	No.	Miles.	d.	d.
NEW SOUTH WALES.†								
1902†	*	27,999	184,064	361,849	*	6.57	0.47	2.92
1903†	*	29,799	186,803	381,245	*	6.27	0.49	3.07
1904†	*	31,116	202,550	396,923	*	6.51	0.47	3.06
1905†	*	31,855	204,604	400,944	*	6.42	0.47	3.02
1906†	*	34,040	223,985	426,931	*	6.58	0.45	3.01
1907†	*	37,975	241,836	462,404	*	6.37	0.46	2.92
1908†	*	42,730	284,465	504,646	*	6.65	0.43	2.83
1909†	2,178,895‡	46,734	310,399	546,904	142‡	6.64	0.42	2.81
1910†	2,569,072‡	48,147	341,498	564,463	133‡	7.09	-0.40	2.81
1911	8,093,526	60,920	906,217	2,074,860	112	14.88	0.53	8.17
SOUTH AUSTRALIA (PROPER).								
1905	1,489,035	9,867	114,378	312,179	77	11.61	0.65	7.59
1906	1,538,166	10,715	125,862	334,797	82	11.75	0.64	7.50
1907	1,667,324	11,498	138,689	337,916	83	12.06	0.58	7.05
1908	1,874,318	12,839	154,038	426,261	82	12.00	0.66	7.97
1909	1,975,455	13,855	160,763	435,430	81	11.60	0.65	7.54
1910	2,116,527	15,282	177,801	482,676	84	11.63	0.65	7.58
1911	2,404,729	16,620	195,216	535,527	81	11.75	0.65	7.73
TASMANIA.								
1902	335,604	761	19,444	88,541	58	25.60	1.09	27.91
1903	337,773	814	19,373	93,969	57	23.78	1.16	27.69
1904‡	357,144	873	21,000	99,632	59	24.05	1.10	27.13
1905	343,868	824	20,693	95,335	60	25.16	1.10	27.77
1906	348,006	860	21,712	98,202	62	25.23	1.08	27.38
1907	357,076	952	23,756	105,555	67	24.95	1.06	26.61
1908	356,845	1,439§	32,639§	112,987	91	22.65	0.83	18.84
1909	373,633	1,547§	32,476§	113,546	87	20.99	0.84	17.61
1910	375,425	1,650§	34,066§	115,181	91	20.65	0.81	16.75
1911	381,301	1,682§	34,758§	119,454	91	20.66	0.82	17.04

\* Not available for suburban lines. † Suburban lines only for years 1902-1910; includes distances within 34 miles of Sydney and including Richmond and Branxton. ‡ Partly estimated. § Compiled on new basis, so as to be uniform with other States. || Exclusive of the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911.

(ii.) *Ton-Miles.* Particulars regarding total "ton-miles" are available for each year since 1901 for the States of New South Wales, South Australia, and Tasmania; corresponding particulars for Western Australia are available for the last five years only. The average freight-paying load carried per "train" is obtained by dividing the total "ton-miles" in the fourth column by the goods-train mileage in the second column. In New South Wales the tonnage carried is exclusive of coal, on which only shunting and haulage charges are collected, and the amount of earnings specified excludes terminals. In South Australia and Tasmania they include terminals, while in Western Australia they exclude wharfage and jetty dues, but include all other charges.

## SUMMARY OF "TON-MILES," 1902 to 1911.

Year ended the 30th June.	Goods Train Mileage.	Total Tons Carried.	Total "Ton-Miles."	Earnings.	Average Freight-paying Load carried per "Train."	Average Miles per Ton.	Earnings per "Ton-mile."
	No.	No. (,000 omitted.)	No. (,000 omitted.)	£	Tons.	Miles.	d.

## NEW SOUTH WALES.

1902	6,586,032	6,164	436,814	1,947,305	66.32	70.87	1.07
1903	6,405,756	6,304	399,579	1,624,248	62.38	63.38	0.98
1904	5,304,660	6,376	393,094	1,692,966	74.10	61.65	1.03
1905	5,431,974	6,418	437,416	1,899,239	80.53	68.15	1.04
1906	6,512,145	7,335	478,642	2,268,321	73.50	65.25	1.14
1907	7,294,165	8,472	564,709	2,516,038	77.42	66.66	1.07
1908	7,746,484	9,804	617,642	2,597,980	79.73	63.00	1.01
1909	7,841,413	8,972	613,469	2,544,457	78.23	68.38	1.00
1910	8,197,953	8,149	690,150	2,866,070	84.19	84.69	0.99
1911	8,913,171	10,055	810,949	3,079,783	90.98	80.65	0.91

## SOUTH AUSTRALIA (PROPER).

1902	2,463,326	1,392	170,523	681,045	69.09	122.48	0.96
1903	2,311,250	1,350	165,357	703,522	71.55	122.52	1.02
1904	2,247,003	1,516	178,443	761,298	79.41	117.74	1.02
1905	2,284,071	1,681	201,789	860,037	88.35	120.04	1.02
1906	2,337,001	1,732	205,079	910,106	87.75	118.38	1.07
1907	2,666,919	2,043	239,855	1,083,504	89.94	117.41	1.08
1908	3,135,803	2,256	272,373	1,184,867	86.86	120.73	1.04
1909	2,949,901	2,166	267,271	1,060,077	90.60	123.42	0.95
1910	3,303,777	2,481	303,361	1,203,373	91.82	122.27	0.96
1911	3,451,238	2,731	328,181	1,322,339	95.09	120.15	0.97

## \* WESTERN AUSTRALIA.

1907	1,939,959	2,091	144,856	964,653	74.67	69.26	1.60
1908	1,976,204	2,059	142,719	948,373	72.22	69.32	1.59
1909	2,011,468	1,997	143,629	945,956	71.41	71.92	1.58
1910	2,280,736	2,242	163,651	1,042,789	71.75	73.00	1.53
1911	2,548,450	2,489	182,738	1,154,662	71.71	73.42	1.52

## † TASMANIA.

1902†	567,314	407	14,331	109,266	25.26	35.30	1.82
1903†	593,943	419	13,791	113,597	23.22	34.86	1.97
1904§	609,914	425	14,900	114,361	24.43	35.05	1.84
1905	601,984	394	14,802	109,220	24.59	37.58	1.77
1906	597,913	399	13,626	104,416	22.79	35.46	1.83
1907	624,303	428	14,822	112,457	23.74	34.59	1.82
1908	671,185	465	17,141	123,493	25.54	36.84	1.73
1909	655,486	467	17,257	125,375	26.33	36.92	1.74
1910	684,365	423	18,966	124,675	27.71	44.84	1.58
1911	659,750	346	16,382	115,008	24.83	47.32	1.68

\* Particulars for previous years not available. Exclusive of jetty returns. † Exclusive of live stock. ‡ To 31st December for years 1902 and 1903; to 30th June for succeeding years. § Partly estimated. ¶ Exclusive of the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911.

(iii.) *Density of Traffic, 1910-11.* The average densities of passenger traffic and of goods traffic, obtained by dividing the passenger-mileage and the ton-mileage respectively by the average length of line worked during year, are shewn in the following table for the year 1910-11 for those States for which particulars are available :—

#### DENSITY OF TRAFFIC PER AVERAGE MILE OF LINE WORKED, 1910-11.

Density of—	N.S.W.	S. Aust. (proper).†	W. Aust.	Tasmania.
Passenger traffic ... ..	244,066	101,940	*	72,716
Goods „ ... ..	218,408	171,374	79,938	34,271

\* Not available. † Exclusive of the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911.

(iv.) *Classification of Commodity Ton Mileage, 1911.* New South Wales is the only State for which particulars, specifying the ton-mileage and the earnings per ton-mile for various classes of commodities, are available. It is hoped that in future years it will be possible to give corresponding particulars for the other States.

The subjoined statement gives particulars for the last financial year. Miscellaneous traffic consists of timber, bark, firewood, bricks, drain-pipes, coal, road-metal in eight-ton lots, agricultural and vegetable seeds in five-ton lots, and traffic of a similar nature. A and B classes consist of lime, vegetables, tobacco leaf, caustic soda and potash, cement, copper ingots, fat and tallow, water and mining plant in six-ton lots, leather in one and three-ton lots, agricultural implements in five-ton lots, and other traffic of a similar nature. The table does not include 300,769 tons of coal on which only shunting and haulage charges were collected, nor does it include £50,558 for haulage, tonnage dues, etc.

#### NEW SOUTH WALES.—SUMMARY OF TON-MILEAGE FOR THE YEAR ENDED 30th JUNE, 1911.

Particulars.	Total Tons Carried.	Total Miles.	Average Miles per Ton.	Earnings (exclusive of Ter- minals).	Earnings per Ton- Mile.	Percentage on Total Tonnage.
	1000 Tons.	1000 Miles.	Miles.	£	d.	per cent.
Coal, coke, and shale ...	5,759	167,069	29.01	326,695	0.47	57.27
Other minerals ...	435	18,745	43.05	47,405	0.61	4.33
Crude ores ...	152	15,383	101.08	32,860	0.51	1.51
Miscellaneous ...	527	37,687	71.55	108,214	0.69	5.24
Firewood ...	250	6,658	26.64	22,242	0.80	2.49
Fruit ...	72	6,546	91.17	28,378	1.04	0.72
Grain and flour ...	788	206,812	262.58	305,731	0.35	7.84
Hay, straw, and chaff ...	205	41,682	203.81	66,084	0.38	2.03
Frozen meat ...	40	5,245	129.84	21,242	0.97	0.40
General goods ...	2	734	352.69	7,780	2.54	0.02
A Class ...	553	55,347	100.03	229,002	0.99	5.50
B „ ...	307	34,339	112.00	236,837	1.66	3.05
C „ ...	22	1,252	55.94	12,268	2.35	0.22
1st Class ...	126	16,815	133.39	208,759	2.98	1.26
2nd „ ...	194	31,162	160.39	481,580	3.71	1.93
Wool Class ...	138	40,825	296.68	338,450	1.99	1.87
Live stock ...	485	124,648	256.99	606,256	1.17	4.82
Total ... ..	10,055	810,949	80.65	3,079,783	0.91	100.00

**19. Interest Returned on Capital Expenditure.**—It may be seen from the figures given in the table in paragraph 16 hereof, that the Government railways in Australia have, on the whole, made a substantial profit during each year since the inception of the Commonwealth, but unfortunately the community does not get the full benefit of this profit, owing to the high rates of interest at which money for railways was borrowed in the early days. Though the average rate during the year ended the 30th June, 1911, was 4.44 per cent., an average does not accurately express the position. At an early period the need of constructing railways for the sole purpose of opening up undeveloped districts was recognised, and lines were built which could not possibly pay for some years to come; as these railways always preceded population the money had to be raised at an almost speculative rate of interest, frequently amounting to 6 per cent., while the more recent loans have been effected at less than 4 per cent., hence the railways have been handicapped by a burdensome interest. At the present time also, spur lines are constructed, which can scarcely be expected to instantly return revenue in excess of the expenditure, and so must, for a time at any rate, be a charge on the more developed branches of the railway systems, and tend to increase the ratio of working costs to revenue. It may be noted, however, that although the loans made for expenditure on railway construction and equipment very largely increase the amount of the public debt of the Commonwealth, forming, in fact, more than half the total debt, the money borrowed has not been sunk in undertakings which give no return, but has been expended on works which are increasingly reproductive, yielding in most cases a direct return on the capital expended, and representing a greater value than their original cost. In Europe the national debts of various countries have been incurred principally through the expenses of prolonged wars and the money has gone beyond recovery, but in Australia the expenditure is represented to a large extent by public works which pay a direct return, which is, on the whole, greater than the amount of interest due upon capital invested. In addition to the purely commercial aspect of the figures relating to the revenue and expenditure of the Commonwealth railways, it is of great importance that the object with which many of the lines were constructed should be kept clearly in view; the anticipated advantage in building these lines has been the ultimate settlement of the country rather than the direct returns from the railways themselves, and the policy of the State Governments has been to use the railway systems of the Commonwealth for the development of the country's resources, to the maximum extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges. Further, the money has been spent in developing immense agricultural, pastoral, and mineral resources, which add to the wealth of the community, while the benefits conferred in providing a cheap and convenient mode of transit, and in generally furthering the trade and the best interests of the Commonwealth, are incalculable.

(i.) *Profit or Loss after Payment of Working Expenses and Interest, 1902 to 1911.* The net revenue of the Government railways in each State after payment of working expenses is shewn in paragraph 16 hereof. The following table shews the amount of interest payable on expenditure from loans on the construction and equipment of the railways in each State, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment.

In this table the positive sign indicates a profit, the negative a loss. It may be seen that for the Commonwealth as a whole there has been a net profit on the Government railways during each of the last six years of the period dealt with.

The same satisfactory state of affairs applies also to the States of New South Wales, South Australia proper, and Western Australia, and with the exception of the year 1907-8, to Victoria. Tasmania and the Northern Territory both shew a loss for each year of the period 1902 to 1911, as also does Queensland, with the exception of the years 1906-7 and 1910-11.

**GOVERNMENT RAILWAYS.—INTEREST ON LOAN EXPENDITURE, PROFIT OR LOSS,  
AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST, 1902 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	N. Ter.	W. Aust.	Tas.	C'with.
AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE (£,000 OMITTED).								
	£	£	£	£	£	£	£	£
1901-2 ... ..	1,435	1,493	837	470	47	235	140	4,657
1902-3 ... ..	1,474	1,474	860	467	47	257	142	4,721
1903-4 ... ..	1,484	1,516	873	471	47	277	143	4,811
1904-5 ... ..	1,527	1,462	876	469	47	309	144	4,834
1905-6 ... ..	1,541	1,472	881	475	47	324	148	4,888
1906-7 ... ..	1,599	1,483	901	480	47	333	148	4,991
1907-8 ... ..	1,649	1,484	932	494	47	343	149	5,098
1908-9 ... ..	1,687	1,428	935	500	47	355	150	5,103
1909-10 ... ..	1,687	1,471	973	508	47	368	152	5,206
1910-11 ... ..	1,797	1,515	953	519	47	382	156	5,369

**PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND  
OTHER CHARGES (£,000 OMITTED).\***

	£	+	£	£	£	£	£	£
1901-2 ... ..	- 33	-291	-448	- 74	- 69	+ 30	- 81	- 966
1902-3 ... ..	-426	-459	-489	- 14	- 48	+ 48	- 61	-1,449
1903-4 ... ..	-307	-100	-379	+ 14	- 43	+131	- 61	- 745
1904-5 ... ..	- 35	-102	-278	+ 68	- 44	+ 45	- 72	- 418
1905-6 ... ..	+385	+ 99	-199	+110	- 45	+169	- 80	+ 379
1906-7 ... ..	+611	+176	+ 16	+223	- 46	+ 68	- 76	+ 977
1907-8 ... ..	+690	- 47	- 35	+277	- 46	+151	- 73	+ 807
1908-9 ... ..	+389	+235	- 59	+198	- 47	+179	- 74	+ 821
1909-10 ... ..	+522	+155	- 49	+263	- 47	+173	- 80	+ 937
1910-11 ... ..	+554	+282	+214	+270	- 48	+245	- 93	+1,422

**PERCENTAGE OF PROFIT OR LOSS TO CAPITAL COST OF CONSTRUCTION AND  
EQUIPMENT.\***

	%	+	%	%	%	%	%	%
1901-2 ... ..	-0.08	-0.71	-2.22	-0.59	-5.96	+0.41	-2.10	-0.76
1902-3 ... ..	-1.02	-1.12	-2.41	-0.12	-4.10	+0.59	-1.57	-1.12
1903-4 ... ..	-0.73	-0.24	-1.81	+0.12	-3.65	+1.46	-1.57	-0.56
1904-5 ... ..	-0.08	-0.25	-1.28	+0.51	-3.76	+0.47	-1.83	-0.31
1905-6 ... ..	+0.88	+0.24	-0.91	+0.82	-3.87	+1.09	-2.03	+0.28
1906-7 ... ..	+1.36	+0.42	+0.07	+1.66	-3.91	+0.66	-1.92	+0.71
1907-8 ... ..	+1.27	-0.11	-0.15	+1.99	-3.92	+1.41	-1.84	+0.58
1908-9 ... ..	+0.82	+0.55	-0.26	+1.11	-3.98	+1.63	-1.85	+0.57
1909-10 ... ..	+1.07	+0.36	-0.20	+1.90	-4.00	+1.52	-1.97	+0.64
1910-11 ... ..	+1.09	+0.64	+0.83	+1.85	-4.12	+2.04	-2.29	+0.93

\* The positive sign indicates a profit, the negative a loss. † Allowing for payment of special expenditure and charges (see paragraph 14 above).

**20. Passenger Fares and Goods Rates.**—Considerable reductions have been made in recent years in passenger fares and in freight rates. These fares and rates are not only changed from time to time to suit the convenience and varying necessities of the railways, but, as traffic is developed and revenue increased, they are also in many cases reduced to an extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges. In New South Wales, a reduction to the amount of £130,000 per annum in rates and fares took effect from the 28th May, 1911. In the same State the accumulated reductions in rates and fares made since October, 1906, amount to £467,000 per annum, and the rebates from the carriage of fodder and starving stock during the three years prior to June, 1909, to about £140,000, while in Victoria the accumulated reduction in rates and fares since February, 1906, represents an annual value of £368,000.

(i.) *Passenger Fares.* On the Australian Government railways two classes are provided for passenger traffic. The fares charged may be classified as follows:—(a) Fares between specified stations (including suburban fares). (b) Fares computed according to mileage rates. (c) Return, season, and excursion fares. (d) Special fares for working-

men, school pupils, and others. Fares in class (a) are issued at rates lower than the ordinary mileage rates. Fares in class (b) are charged between stations not included in class (a). Generally it may be said that mileage-rate fares are computed on the basis of about twopence per mile for first-class and about  $1\frac{1}{2}$  pence per mile for second-class single tickets. In Tasmania, however, the fares are computed on the general basis of  $1\frac{1}{2}$  pence per mile first-class, one penny per mile second-class, with a terminal charge of one penny, with one-sixth added to total. In New South Wales, Victoria, and Queensland the mileage rates are based upon a tapering principle, i.e., a lower charge per mile is made for a long journey than for a short journey. With the exception of New South Wales first-class return fares are generally about  $1\frac{1}{2}$  to  $1\frac{3}{4}$  times the single fare, and the second-class are about 30 to 45 per cent. lower than the first-class fares. In Tasmania, however, return fares (except excursions) are double the single fares. Excursion tickets are issued for the return journey at from about single fare to about  $1\frac{1}{2}$  times the single fare. Season tickets and special fares are issued at reduced rates. In New South Wales passenger fares were reduced on the 28th May, 1911, to the amount of £70,000 per annum, and the issue of return tickets abolished except between stations in the Sydney and Newcastle suburban areas, and between the States and in the tourist districts. In Western Australia special summer recreation fares have been granted by which women and children can travel distances up to 800 miles and return for fares of 25s. and 12s. 6d. respectively. These concessions enable them to escape the heat of the goldfields and spend the summer at one of the coastal towns.

The following table shows the passenger fares for different distances charged in each State, between stations for which specific fares are not fixed :—

### ORDINARY PASSENGER-MILEAGE RATES ON GOVERNMENT RAILWAYS, 1911.

State.	For a journey of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
<b>FIRST-CLASS SINGLE FARES.</b>						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales† ...	4 6	10 9	23 3	35 9	48 3	58 0
Victoria ...	7 6	15 0	30 0	44 6	58 2	72 0
Queensland ...	8 6	16 0	31 0	45 1	58 2	71 4.
South Australia* ...	8 4	16 8	33 4	50 0	66 8	83 4
Western Australia ...	8 4	16 8	33 4	50 0	66 8	83 4
Tasmania ...	7 5	14 8	29 3	...	...	...
Average† ...	7 5	14 11	30 0	45 1	59 7	73 7
Average per passenger-mile† d.	1.78	1.79	1.80	1.80	1.78	1.77
<b>SECOND-CLASS SINGLE FARES.</b>						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales† ...	2 0	7 1	14 9	22 1	25 8	33 6
Victoria ...	5 0	10 0	20 0	29 8	38 10	47 10
Queensland ...	5 8	10 4	19 9	28 2	35 8	43 2
South Australia* ...	5 3	10 5	20 10	31 3	41 8	52 1
Western Australia ...	5 3	10 5	20 10	31 3	41 8	52 1
Tasmania ...	4 11	9 10	19 7	...	...	...
Average† ...	4 8	9 8	19 4	28 6	36 8	45 9
Average per passenger-mile† d.	1.12	1.16	1.16	1.14	1.10	1.10

\* Ordinary mileage rates are not published; the amounts given are therefore computed from fares between specified stations. † Exclusive of Tasmania for hauls of 300 miles and upwards. ‡ Inclusive of suburban rates for 34 miles.

(ii.) *Parcel Rates.* In all the States parcels may be transmitted by passenger train upon payment of the prescribed rates, which are based upon weight and distance carried. The rates vary slightly in the different States. In New South Wales they range from threepence for a parcel not exceeding 3 lbs. for any distance up to 75 miles, to eleven shillings and threepence for a parcel weighing from 84 lbs. to 112 lbs., for a distance of 500 miles. In Victoria the charge for a parcel weighing from 84 lbs. to 112 lbs. for a distance over 450 miles is twelve shillings. The rate in Queensland for a parcel weighing from 85 to 112 lbs. for 500 miles is twelve shillings and sixpence; in South Australia eleven shillings and threepence; in Western Australia thirteen shillings; and in Tasmania for a distance of 250 miles the rate is five shillings and sixpence.

(iii.) *Goods Rates.* The rates charged for the conveyance of goods and merchandise may generally be divided into three classes, viz.:—(a) Mileage rates, (b) District or "development" rates, and (c) Commodity rates. In each of the States there is a number—ranging from 9 in Victoria to 15 in Tasmania—of different classes of freight. Most of the mileage rates are based upon a tapering principle, *i.e.*, a lower charge per ton-mile is made for a long haul than for a short haul; but for some classes of freight there is a fixed rate per mile irrespective of distance. District rates are charged between specified stations and are somewhat lower than the mileage rates excepting in Western Australia, where the terms refer to a special toll of 1s. per ton on goods travelling over certain "district" railways as part payment of the extra cost of working lines laid for developmental purposes through sparsely settled districts. In addition to the ordinary classification of freights under class (a), certain commodities, such as wool, grain, agricultural produce, and crude ores, are given special rates, lower than the mileage rates, under class (c).

Space will not permit of anything like a complete analysis of goods rates in the several States being here given. As an indication of the range and amount of such rates the subjoined tables are given. The first table shews for each State the truck-load rates charged for hauls of different distances in respect of agricultural produce not otherwise specified; these special rates are here given for this class of produce, since it is generally forwarded in truck-loads.

#### RATES FOR AGRICULTURAL PRODUCE IN TRUCK-LOADS ON GOVERNMENT RAILWAYS, 1911.

State.	Charge per Ton in Truck-loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
New South Wales ...	s. d. 5 0	s. d. 7 6	s. d. 9 6	s. d. 10 6	s. d. 11 4	s. d. 12 0
Victoria ...	5 6	8 9	11 6	13 4	15 0	16 8
Queensland ...	4 7	8 9	11 0	12 0	13 0	14 0
South Australia ...	6 2	8 9	12 11	17 1	21 3	25 5
Western Australia ...	6 3	8 11	12 1	17 0	22 0	24 0
Tasmania ...	4 5	8 7	13 10	...	...	...
Average* ...	5 4	8 7	11 9	14 0	16 6	18 5
Average per ton-mile* d.	1.28	1.03	0.71	0.56	0.50	0.44

\* Exclusive of Tasmania for hauls of 300 miles and upwards.

The next tables show for each State the ordinary mileage rates charged per ton for hauls of different distances in respect of (a) the highest-class freight, and (b) the lowest-class freight:—



## ORDINARY GOODS MILEAGE RATES ON GOVERNMENT RAILWAYS, 1911.

State.	Charge per Ton for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.

## HIGHEST-CLASS FREIGHT.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales ...	23	0	44	11	78	3	99	1	107	5	115	9
Victoria ...	26	0	61	0	97	0	134	6	167	9	201	0
Queensland ...	41	8	75	0	133	4	191	8	220	10	235	5
South Australia ...	27	1	52	1	97	11	134	7	166	8	194	2
Western Australia ...	32	1	54	2	97	6	135	5	167	11	195	0
Tasmania ...	32	0	50	0	96	0	...	...	...	...	...	...
Average* ...	30	4	54	6	100	0	139	1	166	1	188	3
Average per ton-mile*	d.	7.28	d.	6.44	d.	6.00	d.	5.56	d.	4.98	d.	4.52

## LOWEST-CLASS FREIGHT.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales ...	2	6	3	7	5	8	7	9	9	10	11	11
Victoria ...	4	3	7	6	11	3	13	4	15	0	16	8
Queensland ...	4	7	8	9	15	0	19	2	23	4	27	6
South Australia †	4	2	7	10	13	7	17	9	21	11	26	1
Western Australia ...	5	0	8	4	14	2	19	2	23	4	27	6
Tasmania ...	4	7	8	9	17	1	...	...	...	...	...	...
Average* ...	4	2	7	6	12	10	15	5	18	8	21	11
Average per ton-mile*	d.	1.00	d.	0.90	d.	0.77	d.	0.62	d.	0.56	d.	0.53

\* Exclusive of Tasmania for hauls of 300 miles and upwards. † Less 20 per cent. for artificial manures.

The classification of commodities varies in the several States. Generally the highest-class freight includes expensive, bulky, or fragile articles, while the lowest-class comprises many ordinary articles of merchandise, such as are particularly identified or connected with the primary industries of each State.

In New South Wales, for example, the highest-class freight comprises such articles as boots, drapery, drugs, groceries, furniture, liquors, crockery and glassware, cutlery, ironmongery, confectionery, and carpets. In the same State the lowest-class freight includes agricultural produce, ores, manures, coal, coke, shale, firewood, limestone, stone, slates, bricks, screenings, rabbit-proof netting, timber in logs, and posts and rails.

21. **Numbers and Description of Rolling Stock, 1911.**—The following table shews, so far as possible in a comparable manner, the number of locomotives and of various classes of rolling stock in use on the Government railways in each State. The figures

given are subject to certain limitations, inasmuch as the classification adopted, as well as the various types of rolling stock in use, are not identical in the several States. In Victoria and Queensland, for example, the brake-vans classified under the heading of coaching vehicles are used indiscriminately for coaching and goods traffic. Again, it is believed that in New South Wales the number of passenger vehicles is really greater than that shewn, certain of the other classes of vehicles being used for composite purposes.

### CLASSIFICATION OF LOCOMOTIVES AND ROLLING STOCK, 1910-11.

State or Territory	N.S.W.	Victoria.			Qld.	South Australia.				N.T.†	W.A.	Tasmania.		Total
Gauge...	ft. in. 4 8½	ft. in. 5 3	ft. in. 2 6	ft. in. 3 6	ft. in. 5 3	ft. in. 3 6	Tram- ways.		ft. in. 5 3	ft. in. 3 6	ft. in. 3 6	ft. in. 3 6	ft. in. 2	—
(a) Locomotives.														
Tender ...	746	393	...	462	95	*171	...	...	5	1	323	65	...	...
Tank ...	157	144	10	39	73	8	...	...	...	...	...	7	7	...
Total ...	903	537	10	501	168	179	...	...	6	323	72	7	2,706	
(b) Coaching Stock.														
Passenger vehicles	1,136	1,304	21	560	260	109	13	2	4	337	172	6	...	...
(Joint stock)	...	12	...	...	8	...	...	...	...	...	...	...	...	...
Brake vans	120	338	1	151	31	28	...	...	2	20	13	...	...	...
(Joint stock)	...	4	...	...	3	...	...	...	...	...	...	...	...	...
Horse boxes	...	57	...	79	18	30	...	...	...	54	38	...	...	...
Carriage trucks	...	17	...	...	...	...	...	...	...	...	3	...	...	...
Post office vans	264	5	...	8	2	12	...	...	...	6	...	...	...	...
Other ...	...	8	...	...	2	3	...	...	1	6	...	...	...	...
Total ...	1,520	1,745	22	798	324	182	13	2	7	423	226	6	5,268	
(c) Goods and Live Stock Wagons.														
Wagons ...	15,195	11,857	189	9,659	2,763	4,460	26	52	130	7,471	1,517	71	...	...
Brake vans	485	...	...	...	71	97	...	...	1	133	...	...	...	...
Departmental	1,048	144	...	174	105	134	...	...	6	76	45	...	...	...
Total ...	16,728	12,001	189	9,833	2,939	4,691	26	52	137	7,680	1,562	71	55,909	

\* Not including two passenger motors. † Transferred from the South Australian Government to the Commonwealth Government on 1st January, 1911.

22. **Number of Railway Employees, 1901 to 1911.**—The following table shews the number of employees in the Railway Departments of each State in the year 1901 and in each year from 1907 to 1911 inclusive, classified according to (a) salaried staff, and (b) wages staff.

From these figures it will be seen that there has been a steady increase in the number of persons engaged in the Railway Departments of the several States. During the period from 1901 to 1911, the total for the Commonwealth has increased from 42,321 to 68,003—an increase of 25,682, or about 60.68 per cent. The largest numerical increase for the individual States was that of New South Wales, viz., 11,068.

Separate returns for salaried and wages staff are not available for South Australia; the number of salaried staff is therefore included in the wages staff.

**GOVERNMENT RAILWAYS.—NUMBER OF EMPLOYEES IN RAILWAY DEPARTMENTS,  
1901 and 1907-11.**

State.	1901.		1907.		1908.		1909.		1910.		1911.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales*	1,372	11,747	1,770	13,411	1,985	15,939	2,163	17,295	2,369	17,854	2,799	21,388
Victoria ...	1,432	10,524	1,586	12,492	1,651	12,936	1,646	12,861	1,835	14,791	2,115	17,668
Queensland ...	994	4,633	949	4,491	1,256	4,766	1,237	6,583	1,471	5,769	1,664	6,364
South Australia†	...	3,855	...	5,531	...	6,326	...	6,274	...	7,086	...	7,552
Northern Territory	†	51	†	72	†	75	†	84	†	91	6	61
Western Australia	876	5,407	921	4,895	802	4,805	769	4,906	779	5,147	872	6,079
Tasmania ...	178	1,252	177	1,030	182	1,077	190	1,111	195	1,292	203	1,232
Commonwealth	4,852	37,469	5,403	41,922	5,876	45,924	6,005	49,114	6,649	52,020	7,650	60,344

\* Exclusive of gate-keepers with free house only. † Separate returns for salaried and wages staffs are not available; the number of salaried staff is included with the wages staff.

23. **Accidents.—Number of Killed and Injured, 1901 to 1911.**—The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for the year 1900-1, and for each of the years 1906-7 to 1910-11 inclusive:—

**GOVERNMENT RAILWAYS.—TOTAL NUMBER OF PERSONS KILLED AND INJURED,  
1901 and 1907-11.**

State.	1900-1.		1906-7.		1907-8.		1908-9.		1909-10.		1910-11.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	†	†	28	287	44	355	43	249	50	338	46	368
Victoria ...	45	371	46	498	79	970	45	451	21	353	49	829
Queensland ...	13	100	11	136	3	143	11	201	14	382	16	104
South Australia ...	8	50	12	112	15	132	12	155	10	243	13	215
Northern Territory	...	...	...	2	...	1	...	...	...	...	...	1
Western Australia*	5	205	11	257	14	271	16	284	13	99	13	114
Tasmania ...	1	8	3	27	2	21	2	28	...	21	1	34
Commonwealth	...	...	111	1,319	158	1,892	120	1,368	108	1,436	138	1,665

\* The returns up to and including the year 1908-9 include all accidents which have occurred on Railway premises as well as those caused through train accidents and movement of rolling stock.  
† Not available.

**(c) Graphical Representation of Government Railway Development.**

1. **General.**—Its railways are so important a factor in the development of Australia that it has been deemed desirable to graphically represent the main facts of their progress from their beginning, viz., from 1855 onwards. To this end the graphs shewn on pages 711 to 712 have been prepared. The distribution of the railways is shewn on the map on page 709.

2. **Capital Cost and Mileage Open** (page 711).—The graph shews that the ratio between these elements was, naturally enough, very variable from 1855 to 1870,

consequent upon progressive decrease in cost of construction. It then became subject to a more regular change, implying reduction of average cost.

3. **Cost per Mile Open.**—The fluctuations in cost per mile open are clearly indicated by the graph on page 711. In 1855 the cost per mile open was no less than £28,430; by 1858 it had fallen to £17,752, when it rose again to a maximum of £35,958 in 1862. It then diminished rapidly till 1883—when it reached £10,496 per mile—then slowly till 1887, when it amounted to £10,017 per mile. Again rising, this rate attained to £10,537 in 1892, since when it has, on the whole, been declining, reaching its lowest value, £9497, in 1910.

4. **Gross Revenue.**—This graph (page 711) exhibits considerable irregularities, the most striking of which are the maxima at 1892 and 1902. The fall commencing in 1892 was in consequence partly of the commercial crisis and partly of the then droughty conditions of several of the States, while that of 1902-3 was due to drought. In the latter case the recovery was very rapid.

5. **Working Expenses and Net Revenue.**—The characteristics of these graphs (page 711), are similar to those of "Gross Revenue," and the same remarks apply. It may be noted, however, that the working expenses are increasing at a much slower rate than gross and net revenue.

6. **Percentage of Working Expenses to Gross Revenue.**—This is shewn for each State and for the Commonwealth on page 712, and for the Commonwealth only, on a larger scale, on page 711. The curve shews considerable fluctuations, but points also to the fact that, although a slight rise occurred in 1908, there was from 1903 to 1907 a rapid, and therefore very satisfactory, decline in the percentage of working expenses to gross revenue; since 1907, however, there has been a steady increase. The fluctuations of this percentage, for the individual States, call for no special comment.

7. **Percentage of Net Revenue on Capital Cost.**—For the Commonwealth this graph is shewn on a large scale on page 711 and on page 712 both for Commonwealth and States. After exhibiting somewhat remarkable oscillations in the earlier years, and less marked ones between 1885 and 1900, and also a rapid fall to 1903, the curve from that year shews a well marked increase until the year 1908, a slight fall occurring in the last year. Maxima were reached in 1865, 1877, 1881, 1907, and 1911—viz., 3.44, 3.71, 4.14, 4.36 and 4.44 per cent.

For the individual States the results are in general very satisfactory, the increases in the percentages recently being greatest for Queensland, Western Australia, Victoria, and South Australia, less marked for New South Wales, while a decrease has occurred in Tasmania, owing principally to decrease in coal traffic and a shortage in grain and potato crops.

The remarkable maximum for Western Australia in 1896 is consequent upon the large use made of the western railways at the time of the development of the Western Australian goldfields.

8. **General Indications of Graphs.**—Reviewing the cost of railways, as a whole, it may be noted that for the periods indicated the average cost per mile open on the entire total runs as follows:—

**GOVERNMENT RAILWAYS.—AVERAGE COST PER MILE OF LINE OPEN,  
COMMONWEALTH, 1855 to 1911.**

Period ... ..	1855-1872.	1873-1882.	1883-1892.	1893-1902.	1903-1911.
	£	£	£	£	£
Cost per mile ... ..	24,561	13,700	10,286	10,010	9,641

For the period 1903 to 1907 the fall in percentage of working expenses on gross revenue was from 68.80 to 57.18 per cent., but it then gradually increased to 61.94 per cent. in 1911. The rise of the percentage of net revenue on total capital cost for the years 1903 to 1907 was from 2.53 to 4.36 per cent. For the years 1908 to 1910 it fell off, but rose to 4.44 per cent. in 1911.

While the sinister influence of the drought of 1902 is strikingly shewn in the curves (a) by the fall in the gross and net revenue in 1902-3, (b) by the fall in the percentage of net revenue on capital cost, and (c) by the increase of working expenses on gross revenue, the rapidity of recovery is even more striking, and goes to indicate the great elasticity of the economic condition of the Commonwealth. Still more remarkable is the fact that a group of railways, necessarily constructed largely in accordance with a policy of widespread development of Australia's resources rather than as mere commercial enterprises, and costing so large a sum as £152,855,231 for construction and equipment up to the 30th June, 1911, should, nevertheless, yield so large a revenue, bringing in for the year 1910-11 a return, as already pointed out, of no less than 4.44 per cent.

#### (D.)—Private Railways.

1. **Total Mileage Open, 1911.**—As has been stated in a previous part of this Section (see A. 3) a number of private railway lines have from time to time been constructed in the Commonwealth. By far the greater proportion of such lines, however, has been laid down for the purpose of hauling timber, coal, or other minerals, and is not generally used for the conveyance of passengers or for public traffic; in many cases the lines are often practically unballasted and are easily removable, running through bush and forest country in connection with the timber and sugar-milling industries, and for conveying firewood for mining purposes. Many of these lines may perhaps be said to be rather of the nature of tramways than of railways. Private railways referred to herein include (a) lines open to the public for general passenger and goods traffic; and (b) branch lines from Government railways and other lines which are used for special purposes and which are of a permanent description. Other lines are referred to in the part of this Section dealing with Tramways (see § 3, *Tramways*).

The following table gives particulars of private railways in the Commonwealth open for traffic up to the 30th June, 1911. A classification of these lines according to their gauge has already been given (see A. 6).

**MILEAGE OF PRIVATE RAILWAYS OPEN, 1911.**

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
For general traffic ...	141	14	501	...	277	166	1,099
For special purposes ...	125	37	21	58	555	39	835
Total ...	266	51	522	58	832	205	1,934

2. **Classification of Private Railways, 1910-11.**—The subjoined statement gives particulars regarding private railways, so far as returns are available, in each State for the year 1910-11. In this statement the lines inset are sub-branches from the main branches specified.

## CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1910-11.

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
NEW SOUTH WALES.			
1. BRANCHES FROM NORTHERN LINE, N.S.W. GOVT. RLYS.—	ft. in.	Miles.	
East Greta to Stanford-Merthyr and connections...	4 8½	24½	Coal and passengers
Hexham-Minmi ... ..	4 8½	6	" "
Brown's line to Richmond Vale ... ..	4 8½	11½	Coal
Three other sub-branches ... ..	4 8½	5	"
Newcastle-Wallsend Co.'s lines ... ..	4 8½	4¾	"
Five sub-branches... ..	4 8½	4	"
Waratah Coal Co.'s line ... ..	4 8½	4½	"
Old Burwood Pit ... ..	4 8½	7½	"
Gunnedah Coal Co.'s line ... ..	4 8½	4½	"
Twelve other branches ... ..	4 8½	16	Coal, coke, ores & stone
Total ... ..	4 8½	88½	
2. BRANCHES FROM NORTH-COAST LINE GOVT. RAILWAYS—			
New Redhead Coal Co.'s lines, Adamstown to Burwood			
Extended, and Dudley lines ... ..	4 8½	8	Coal and passengers
Seaham Coal Co.'s lines, Cockle Creek to West Wall-			
send and Seaham collieries ... ..	4 8½	6	"
Nine other branches ... ..	4 8½	9	Coal
Total ... ..	4 8½	23	
3. BRANCHES FROM SOUTHERN LINE, N.S.W. GOVT. RLYS.—*			
Liverpool-Warwick Farm ... ..	4 8½	¾	Racecourse traffic
4. BRANCHES FROM S. COAST LINE, N.S.W. GOVT. RLYS.—†			
Mount Kemplia Coal Co. ... ..	4 8½	7½	Coal
Corrimal and Balgownie ... ..	4 8½	3¾	"
Australian Smelting Co., Dapto ... ..	4 8½	2½	Ores
Mount Keira Coal Co., Belmore Basin ... ..	4 8½	3	Coal
Nine other branches ... ..	4 8½	1½	"
Mount Pleasant Coal Co. ... ..	3 6	3½	"
Total ... ..	4 8½ 3 6	31½ 3½	
5. BRANCHES FROM WESTERN LINE, N.S.W. GOVT. RLYS.—			
Commonwealth Oil Corporation's line from Newnes			
Junction ... ..	4 8½	32	General
Eleven other branches ... ..	4 8½	6½	Coal, metal, and ores
Total ... ..	4 8½	38½	
6. SILVERTON TRAMWAY—			
Broken Hill and Cockburn ... ..	3 6	36	General
7. DENILIQUIN-MOAMA LINE ... ..	5 3	45	"
Total for State ... ..	4 8½ 3 6 5 3	181½ 39½ 45	

\* Three other branch private lines having a total length of 24 miles have been constructed for the conveyance of minerals, but are now closed. † The Illawarra Harbour and Land Corporation's line, 6½ miles long, constructed for general traffic is not now working.

## CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1910-11 (Continued).

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
VICTORIA.*			
1. KERANG TO KOONDROOK TRAMWAY ... ..	ft. in. 5 3	Miles. 14	General
2. ALTONA BAY RAILWAY— Williamstown racecourse and pit at Altona ... ..	5 3	2½	Sand and stone
3. TOOBORAC into bush ... ..	5 3	24	Firewood
4. TRAWALLA to WATERLOO ... ..	5 3	8	.. and gravel
5. CARISBROOK to NEW HAVILAH MINE ... ..	5 3	2½	.. & mining timber
Total for State... ..	5 3	51	

\* The Rosstown railway, running between Elsternwick and Oakleigh railway stations, about 5 miles in length, is not in use.

## QUEENSLAND.

	ft. in.	Miles.	
1. BRANCHES FROM GREAT NORTHERN LINE, GOVT. RLYS.— Three branch lines ... ..	3 6	2½	Mineral traffic
2. BRANCHES FROM NORTH-COAST LINE, GOVT. RAILWAYS— Bundaberg to Millaquin ... ..	3 6	2	Sugar
3. BRANCH FROM WESTERN LINE, GOVT. RAILWAYS— Munro's tramway to Perseverance ... ..	3 6	10	Timber & farm produce
Gulland's lines to coal mines ... ..	3 6	1½	Coal
Stafford's lines to coal mines ... ..	3 6	½	"
4. BRANCHES FROM CAIRNS LINE, GOVT. RAILWAYS— *Cairns to Babinda ... ..	3 6	37½	General (chiefly sugar)
Greenhill branch ... ..	2 0	4½	Sugar
Chillagoe railway, Maresba to Mungana ... ..	3 6	103	General (chiefly coal and
Mount Garnet tramways, Lappa Jn'tn to Mt. Garnet ... ..	3 6	33	" " (minerals)
Stannary Hills tramway, Boommooc to Rocky Bluffs ... ..	2 0	21½	" " "
Mount Molloy tramway ... ..	3 6	20	" " "
Etheridge railway, Alma-den to Forsayth ... ..	3 6	143	General " "
5. BRANCH FROM SOUTH-COAST LINE, GOVT. RAILWAYS— Beaudesert tramway to Rathdowney, Tabooba Junction to Lamington ... ..	3 6	36½	" (chiefly timber and dairy produce)
6. INGHAM TRAMWAY— Ingham to Stone Terminus ... ..	2 0	17½	General
Lucinda to East Ingham ... ..	2 0	17	"
7. GERALDTON TRAMWAY— Geraldton towards Herberton... ..	2 0	20½	.. (chiefly sugar)
8. MOSSMAN TRAMWAY— Port Douglas to S. Mossman and Mowbray Rivers ... ..	2 0	14½	..
9. BRANCH FROM BOWEN LINE— Bowen to Prosperpine ... ..	3 6	38	..
Total for State... ..	3 6 2 0	427 94½	

\* This line was taken over by the Government on 1st July, 1911. † Including sidings.

## SOUTH AUSTRALIA.

BROKEN HILL PROPRIETARY CO.'S LINE— Iron Knob to Spencer's Gulf ... ..	ft. in. 3 6	Miles. 58	Carriage of iron & steel flux
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## CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1910-11 (Continued).

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
WESTERN AUSTRALIA.*			
1. MIDLAND RAILWAY— Joining Govt. lines at Midland Junction & Walkaway	ft. in. 3 6	Miles. 277	General
2. W.A. GOLDFIELDS FIREWOOD SUPPLY CO.'S LINE— From Kurrawang into bush	3 6	73	Firewood
3. KALGOORLIE AND BOULDER FIREWOOD CO.'S LINE— Goodwood railway, from Lake Side into bush	3 6	35	"
Lancefield railway into bush	2 0	26	"
Laverton to junction Lancefield railway	2 0	4½	"
4. W.A. JARRAH SAWMILLS LINE— From Kirtup to mills and into bush	3 6	6½	Timber
5. TIMBER CORPORATION CO.'S LINE— From Greenbushes to mills and into bush	3 6	15	"
6. S.-WEST TIMBER HEVERS' CO-OP. SOCIETY'S LINE— From Collie into bush	3 6	8½	"
7. MILLAR'S KARRI AND JARRAH CO.'S LINES— Upper Darling Range railway, from Pickering Brook to Canning mills and bush	3 6	12½	"
Jarrahdale and Rockingham railway, from Mundigging to Rockingham and bush	3 6	51	"
Yarloop railway to mills and bush	3 6	51½	"
Mornington mills rly., from Wokalup to mills & bush	3 6	24½	"
Ferguson River railway, from Dardanup to mills and into bush	3 6	32½	"
Karridale railway, to Hamelin & Flinders Ports from Karridale and into bush	3 6	58	"
Collie Mills railway, from Worsley into bush	3 6	15½	"
8. BUNNING BROS. LTD., LINES— From Lion Mill, Argyle, and Cardiff to bush	3 6	21	"
9. NORTH DANDALUP S.M. RAILWAY— To mill and bush	3 6	8	"
10. SEXTON AND DRYSDALE'S BUSH RAILWAY— From Noggerup to bush	3 6	4½	"
11. SWAN SAW MILL RAILWAY— From Lowden to mill and bush	3 6	5	"
12. W.A. TIMBER AND FIREWOOD CO. LTD. LINE— Kurramia railway, from Kalgoorlie-Kanowna railway to bush	3 6	48	Firewood
13. SONS OF GWALIA GOLD MINING CO.'S LINE— Railway into bush	1 8	18	"
14. MURCHISON FIREWOOD CO.'S LINE— Nallan wood railway, from Nallan siding to bush	3 6	24	"
15. WHIM CREEK TO BALLA RAILWAY	2 0	13½	Copper Ore
Total for State...	3 6 2 0 1 8	769½ 44½ 18	

\* To the 31st December, 1909.

## TASMANIA.

1. EMU BAY RAILWAY CO.'S LINES— Burnie to Waratah	ft. in. 3 6	Miles. 104	General
Gulldford to Zeehan	3 6		
Rayna to Dundas	3 6		
2. MOUNT LYELL MINING AND RAILWAY CO.'S LINES— Strahan to Queenstown	3 6	23	"
Gormanston to Kelly Basin	3 6	30	"
3. SANDFELY COLLIERY CO.'S LINE— North-west Bay Co.'s jetty to mine	2 0	12	Minerals
4. HUON TIMBER CO.'S LINE* Tasmanian Gold Mining Co.'s LINE— Beaconsfield to Beauty Point†	3 6	13	Timber
5. ZEEHAN TRAM CO.'S LINE— Emu Bay railway to British Queen	3 6	3½	Minerals and occasionally passengers
6. DECK RIVER RAILWAY— Leesville to Parish of Williams†	2 0	2½	Minerals and occasionally passengers
7. MAGNET SILVER MINING CO.'S LINES— Magnet Junction to Magnet	3 6	8	Chiefly timber
	2 0	10	Minerals and passengers
Total for State...	3 6 2 0	180½ 24½	

\* Terminal points not fixed in May, 1908, as extensions still under construction. † Also branch lines as follows:—Electric railway, 1½ miles long, to reduction works, 2 ft. gauge; surface railways, horse, ½ mile long, 2 ft. gauge. ‡ Extensions under construction.



3. **New South Wales.**—In this State the mileage of private railways open to the public for general traffic at the end of 1910 was 141, and of lines used for special purposes, 125 miles. Most of these lines were constructed primarily for the purpose of conveying coal from the mines to the Government railway systems. Particulars for the year 1910 of the operations of lines open for general traffic are given, so far as available, in the table on page 741.

(i.) *Private Railways Open for General Traffic.* The most important of the lines open for general traffic are as follows:—(a) *The Deniliquin-Moama Line.* In 1874 permission was granted by the New South Wales Government to a private company to construct a line forty-five miles long from Deniliquin, in the Riverina district, to Moama, connecting with the Victorian Railway system at the Murray Bridge, near Echuca. The line was opened in 1876, the land required being granted by the Government. (b) *The Cockburn-Broken Hill Line.* This line is owned by the Silverton Tramway Company. It was opened in 1888, and connects Broken Hill with the South Australian railway system, having a total length of 36 miles. (c) *East Greta Line.* This line, belonging to the East Greta Coal Mining Company, runs from East Greta Junction, on the Northern line of the Government railways, to Stanford Merthyr, a distance of 8 miles. (d) *The New Redhead Coal Company's Railway.* The lines owned by this company branch from the Northern line of the Government railways, and run from Adamstown to Burwood Extended Colliery, and from Adamstown to Dudley Colliery, a total distance of 8 miles. The lines are worked by the Railway Department, coal waggons being supplied in part by the coal companies using the line. The colliery companies using the line pay a way-leave for right to run their coal over the line, and the Railway Commissioners allow the New Redhead Company a proportion of the revenue from the passenger and goods traffic. (e) *The Seaham Coal Company's Railways.* This line runs from Cockle Creek to West Wallsend and Seaham Collieries, and has a total length of 6 miles. (f) *Hexham-Minni Railway.* This line branches from the Northern line of the Government railways and has a length of 6 miles. Further particulars are not available. (g) *The Commonwealth Oil Corporation's Railway.* This line runs from Newnes Junction on the Great Western line of the Government railways to the company's refinery, a distance of 32 miles. The Shay geared type of locomotive is in use on this line. (h) *The Warwick Farm Line* is a short line, three-quarters of a mile in length, connecting the Government line near Liverpool with the Warwick Farm Racecourse. Government rolling-stock is used.

In addition to the lines referred to above, legislative sanction was obtained in 1890 for the construction of a private line from the flux quarries at Tarrawingee to the Broken Hill line, a distance of 40 miles. The line was purchased by the Government in 1901, and is operated by the Silverton Tramway Company under lease from the Chief Commissioner, who pays the working expenses and receives the ordinary earnings and one-half the net receipts on special and holiday traffic.

4. **Victoria.**—In Victoria the only private railway open for general traffic is the Kerang-Koondrook tramway, opened in 1889. The cost of construction of this line to the end of September, 1911, was £38,972, paid out of a loan advanced by the Victorian Government. The total length is  $14\frac{1}{4}$  miles. The line is at present controlled by the Kerang Shire Council, but proposals have recently been made for its transfer to the Railway Department.

A line running from Elsternwick to Oakleigh, a distance of about 5 miles, has been constructed by a private company, but is not in use.

5. **Queensland.**—In this State private railways open for general traffic may be grouped under two heads:—(i.) Lines constructed primarily for mining purposes, and (ii.) Shire tramways.

(i.) *Mining Railways.* (a) *The Chillagoe Railway.* The most important of these is the Chillagoe railway, constructed under the Mareeba to Chillagoe Railway Act 1897, and opened in 1901. This line runs from Mareeba, on the Cairns railway, to Musgana, a distance of 103 miles. (b) *The Stannary Hills Line.* This line branches from the

Chillagoe railway at Boonmoo and runs to Rocky Bluff, *via* Stannary Hills, a total distance of 21 miles. The gradients on this line, which has a gauge of 2 feet, range as high as 1 in 27, while the radius of some of the curves is as low as  $1\frac{1}{2}$  chains. An additional length of 8 miles has been surveyed with a view to extending the line. (c) *The Mount Garnet Railway*. This line also branches from the Chillagoe railway at Lappa Junction, and runs for a distance of 33 miles, as far as Mount Garnet.

(ii.) *Shire Tramways*. Under Part XV. of the Local Authorities Act of 1902 provision is made whereby not less than one-third of the ratepayers in any district may petition the local authority to apply to the Governor for the constitution of a tramway area. The Governor may define the area and may also approve of the plans and specifications of the proposed tramway. The amount which may be advanced by the Government for the construction or purchase of a tramway may not exceed a sum equal to £3000 for every mile of its length. As regards repayment of loans, no sum need be paid during the first three years, but after the expiration of that period the principal and interest must be repaid by half-yearly instalments on the basis provided for by the "Local Works Loans Act, 1880 to 1899." For the purpose of raising the money to pay these instalments the local authority may levy a rate upon all ratable property within the tramway area. The money required for the tramway may be raised by the local authorities by the issue of debentures.

6. **South Australia.**—In this State there are no private railways open for general traffic. The only private line is that owned by the Broken Hill Proprietary Company, running from Iron Knob to the seaboard near the head of Spencer's Gulf, a distance of 58 miles. The line is utilised for the carriage of flux for use in connection with the smelting works at Port Pirie.

7. **Western Australia.**—Owing to the Government's past difficulty in constructing lines urgently required for the development of the country, private enterprise was encouraged to undertake the work of construction on the land-grant principle, and two trunk lines were thus constructed. The greater part of the private lines now open, however, have been constructed in connection with the timber industry. (i.) *The Midland Railway*. This line is 277 miles in length, and runs from the Midland Junction, ten miles from Perth, to Walkaway, where it joins the Government line running to Geraldton. It was constructed under a concession of 12,000 acres of land per mile of line constructed, to be selected along the entire route of the railway. (ii.) *The Great Southern Railway*. This line, which was built by private enterprise under the land-grant system, is 242 miles in length, and was acquired by the Government by purchase on the 1st January, 1897. The total price paid, with all the interests of the private company and of the original concessionaire, was £1,100,000, which was divided by the Government for book-keeping purposes into £300,000 for the land and £800,000 for the railway. (iii.) *Millar's Karri and Jarrah Company's Lines*. These lines have mostly been built under special timber concessions and leases. There were, at the end of the year 1909, in all seven lines situated in various parts of the State extending into the bush, whence logs are brought to the mills. At the end of 1909 the total length of these lines was 245 miles. (iv.) *Other Lines*. There are also a number of other lines in various parts of the State used chiefly in connection with the timber industry. These are specified in the tabular statement on page 738.

8. **Tasmania.**—In this State there are three private lines open for general traffic. They are all situated in the western part of the island.

(i.) *The Emu Bay Railway Company*. The lines owned by this company run from Burnie to Waratah, from Guildford to Zeehan, and from Rayna to Dundas, and have a total length of 104 miles.

(ii.) *The Mount Lyell Mining and Railway Company*. The Mount Lyell railway runs from Regatta Point, Strahan, to Queenstown, and the North Mount Lyell line from Kelly Basin to Linda. The former line, 22 miles in length, was constructed in 1895-6, while the latter line, 30 miles long, was taken over from the North Mount Lyell Copper Company on the amalgamation of the two companies in 1903. The line from Kelly Basin to Linda is now run only intermittently.

(iii.) *The Magnet Silver Mining Company's Railway.* This line runs from Magnet Junction, near Waratah, on the Emu Bay Company's line to Magnet, a distance of 10 miles.

9. **Operations of Private Railways, 1910.**—The tabular statement given below shews particulars, so far as returns are available, for the year 1910 of all private railways open to the public for general traffic in the Commonwealth:—

**PARTICULARS OF PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC, 1910.**

Line.	Miles Open.	Capital Cost.	Gross Revenue.	Expenses.		Train Miles.	Passenger Journeys.	Tons of Goods, etc.	No. of Employees.	Rolling Stock.		
				Working.	Interest, etc.					Locomotives.	Coaches.	Wagons.
	No.	£.	£.	£.	£.	No.	No. '000.	Tons. '000.	No.	No.	No.	No.
NEW SOUTH WALES.												
Deniliquin-Moama	45	162,672	19,207	9,873	730	38,194	15	35	51	4	6	63
Silverton Tramway	36	426,010	169,868	56,883	...	153,345	45	1,004	253	16	17	618
East Greta Railway	8	130,200	37,515	24,978	6,510	279,920	561	35	204	14	29	24
Seaham Colliery Co.	6	16,000	1,130	d	d	5,870	15	6	16	2	5	...
New Redhead Co.	8	90,000	3,717	1,035	2,913	d	d	d	8	h	h	h
Hexham-Minmi	6	d	941	719	...	8,736	14	1	7	1	4	3
C'wth. Oil Corp'n	32	190,159	2,723	9,956	9,377	40,376	5	39	63	5	2	35
Total a	141	1015,041	235,101	103,444	19,530	526,431	655	1,120	602	42	63	743

**VICTORIA.**

Kerang-Koondrook	14	38,972	4,863	1,866	1,816	18,900	12	d	10	2	1	6
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**QUEENSLAND.**

Chillagoe Railway	103	420,276	81,287	18,351	...	106,911	38	142	118	8	2	152
Stannary Hills	21½	64,320	4,946	4,207	...	14,151	4	13	13	3	2	76
Mount Garnet	33	100,000	2,606	2,872	...	10,713	3	3	12	1	1	4
Etheridge c	143	d	d	d	d	d	d	d	d	d	d	d
Beaudesert	36½	90,000	7,794	3,812	2,905	24,484	15	f 13	27	i 2	3	h
Cairns-Mulgrave b	37½	122,100	17,883	12,184	5,740	62,742	73	107	53	5	7	126
Douglas-Mossman	14½	41,358	5,879	3,255	1,617	10,999	6	9	12	2	3	21
East Ingham-Stone	17½	28,696	1,538	e 37	1,407	d	1	d	d	d	1	d
Lucinda-E. Ingham	17	d	1,026	d	d	d	8	d	d	d	2	d
Bowen-Proserpine	38½	100,662	d	d	d	6,060	d	d	258	d	d	d
Geraldton Tramway	20½	49,938	j 3,396	2,604	1,959	16,988	5	19	15	2	2	21
Mt. Molloy	20	46,320	2,288	1,908	d	9,800	1	3	8	1	1	8
Total a	501	1063,670	128,643	49,233	13,628	262,848	154	309	516	24	24	408

**WESTERN AUSTRALIA.**

Midland Railway	277	d	119,500	68,232	d	456,074	56	70	312	10	10	198
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**TASMANIA.**

Emu Bay Railway	104	603,491	59,229	26,076	19,454	134,383	32	59	119	9	10	134
Mt. Lyell Railway	22	216,086	30,507	19,741	...	51,705	31	125	85	7	7	127
Nth. Mt. Lyell Rly.	30	316,638	3,051	4,787	...	7,804	6	10	18	4	3	53
Magnet Railway	10	20,101	243	1,741	...	7,520	1	...	8	3	1	4
Total a	166	1156,316	93,030	52,345	19,454	201,412	70	194	230	23	21	318
Total for C'wth. a	1,099	3273,999	551,137	275,120	54,428	1465,665	917	1,663	1,670	101	119	1,673

(a) Incomplete. (b) Purchased by Government on 1st July, 1911, to form part of North Coast Railway. (c) Taken over by Government on 5th February, 1911. (d) Not available. (e) Exclusive of one guard's salary. (f) Exclusive of 4030 head of live stock. (g) Exclusive of 224,289 head of live stock. (h) Government rolling-stock used. (i) One hired. (j) Exclusive of £1471 received from special tram rate levy on land. (k) Including sidings.

### § 3. Tramways.

1. **General.**—Tramway systems are in operation in all the States of the Commonwealth, and in recent years considerable progress has been made in the adoption of electrical traction, the benefit of which is now enjoyed by a number of the principal towns of the Commonwealth.

There are also in many parts of Australia private tramway lines which are used for special purposes, usually in connection with the timber, mining, or milling industries. Though efforts have been made to collect particulars of these lines, the returns are generally too incomplete for publication.

(i.) *Total Mileage Open and Classification of Lines.* The following table shews the total mileage of tramway lines open for general passenger traffic in each State and in the Commonwealth at the end of the year 1910-11, classified (a) according to the motive power utilised and (b) according to the nature of the authority by which the lines are controlled:—

#### TRAMWAYS.—CLASSIFICATION OF MILEAGE OPEN FOR PASSENGER TRAFFIC, 1910-11.

Nature of Motive Power and Controlling Authority.		N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tas.	C'wealth.
ACCORDING TO MOTIVE POWER.								
		Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	...	122	44	34	39	53	15	307
Steam	...	72	1	...	...	...	...	73
Cable	...	...	46	...	...	...	...	46
Horse	...	...	13	...	24	27	...	64
Total	...	194	104	34	63	80	15	490
ACCORDING TO CONTROLLING AUTHORITY.								
Government	...	190	5	...	18	27	...	240
Municipal	...	...	5	...	39	30	...	74
Private	...	4	94	34	6	23	15	176
Total	...	194	104	34	63	80	15	490

2. **New South Wales.**—In this State the tramways, with but few comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners.

(i.) *Government Tramways.* In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1911, seven such systems in operation within the metropolitan area, the most important being the city and suburban lines, 97 miles in length (168½ miles single track); the North Shore line, 16½ miles in length (26½ miles single track); and the Manly to The Spit line, 6½ miles in length. All of these systems are now operated by electricity. There are three systems on which the motive power used is steam, namely—(a) the line from Ashfield to Mortlake and Cabarita, 8½ miles long, (b) from Kogarah to Sans Souci, 5½ miles in length, and (c) from Arncliffe to Bexley, 2½ miles long. The line from Manly to Brookvale (3½

miles) has been converted from steam to electric traction (May 1911). There are also Government steam tramways in operation at Newcastle, Broken Hill, Parramatta, from East to West Maitland, and from Sutherland to Cronulla.

(a) *Sydney Tramways.* The first tramway constructed in Sydney ran from Bridge-street to Hay-street via Hunter-street. It was opened in September, 1879, and the motive power was steam. In the following few years these steam tramways were considerably extended. The electric system was not introduced into the city until the close of the year 1899, though it had at that time been in operation for some years in North Sydney. The tramways in the heart of the city, running along King-street to the suburb of Woollahra, as well as those in North Sydney, were originally worked by underground cables, and have since been converted into electric lines on the overhead trolley system. In December, 1899, the electric tramway, extending from the Circular Quay along George-street to the Redfern Station, and thence to the densely-populated district of Pyrmont, was opened for traffic. This tramway is a double track, and is  $3\frac{1}{4}$  miles in length. Single lines have been constructed along Castlereagh and Pitt streets, with the object of relieving the traffic along George-street. The whole of the steam tramways in Sydney and suburbs, with the exception of the Ashfield-Mortlake, the Kogarah-Sans Souci, and the Arncliffe-Bexley, have now been converted into electric lines, and provision for the extra power required for the electrification of the first two of these lines has been made at the central power station. Two new sub-stations have been erected, one at North Sydney and the other at Manly.

(b) *Other Tramway Systems.* In Newcastle the first section of the tramways, from Perkins-street to Plattsburg, was opened in 1887; the total length open on the 30th June, 1911, was  $24\frac{1}{2}$  miles. At Broken Hill and Parramatta the first sections of the tramways were opened in 1902. On the 30th June, 1911, the mileage open at Broken Hill amounted to 9, and at Parramatta to  $6\frac{1}{2}$  miles. The line from East to West Maitland,  $4\frac{1}{2}$  miles long, was opened in February, 1909. There are also three short lengths of tramways in New South Wales run by private companies. Further particulars are given below.

(c) *Particulars of all Government Tramways, 1902 to 1911.* The following table shows the total length, the capital cost, the gross revenue, working expenses, and net earnings, and the percentages of working expenses on gross revenue, and of net earnings on capital cost, for each financial year from 1901-2 to 1910-11 inclusive.

**NEW SOUTH WALES.—PARTICULARS OF WORKING OF GOVERNMENT TRAMWAYS  
1902 to 1911.**

Year ended the 30th June.	Total Length of Lines Open.	Capital Expended on Lines Open.	Gross Revenue.	Working Expenses.	Net Earnings.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.
	Miles.	£	£	£	£	per cent.	per cent.
1902 ...	104	2,829,363	631,757	541,984	89,773	85.79	3.19
1903 ...	124 $\frac{1}{2}$	3,371,587	752,034	654,165	97,869	86.98	2.90
1904 ...	125 $\frac{1}{2}$	3,471,759	802,985	673,625	129,360	83.89	3.73
1905 ...	125 $\frac{1}{2}$	3,637,922	813,569	685,682	127,887	84.28	3.51
1906 ...	126	3,669,096	851,483	665,083	186,400	78.11	5.08
1907 ...	128 $\frac{1}{2}$	3,669,524	908,701	727,947	180,754	80.11	4.92
1908 ...	132 $\frac{1}{2}$	3,732,991	1,011,994	809,065	202,929	79.95	5.44
1909 ...	151 $\frac{1}{2}$	4,252,731	1,097,565	875,560	222,005	79.77	5.61
1910 ...	165 $\frac{1}{2}$	4,668,797*	1,185,568	983,587	201,981	82.96	4.33
1911 ...	190	5,121,586*	1,365,631	1,143,949	221,682	83.77	4.33

\* £47,455 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

The net result, after providing for all working expenses and £174,055 for interest on the capital invested, was a surplus of £47,627 in 1910-11, as compared with £45,879 in the preceding year. During the year 1910-11, 230,275,938 passengers were carried without any accident resulting in loss of life to any of the passengers.

(d) *Particulars of Different Systems of Government Tramways, 1910-11.* In the subjoined statement particulars are given of the working of the electric and steam tramways in Sydney, and of the other Government tramways at Parramatta, Sutherland, Newcastle, Maitland, and Broken Hill.

**NEW SOUTH WALES.—PARTICULARS OF THE WORKING OF THE VARIOUS  
GOVERNMENT TRAMWAYS, 1910-11.**

Line.	Length	Total Cost.	Gross Revenue.	Working Expenses.	Interest.	Profit or Loss.*
	Miles.	£	£	£	£	£
Sydney and Suburban—						
Electric ... ..	120 $\frac{3}{4}$	4,585,240	1,256,672	1,033,229	157,116	+66,327
Steam ... ..	16 $\frac{3}{4}$	107,728	16,558	21,211	3,475	— 8,128
Total... ..	137 $\frac{1}{2}$	4,692,968	1,273,230	1,054,440	160,591	+58,199
Parramatta Steam	6 $\frac{1}{2}$	36,524	5,074	4,755	1,272	— 953
Sutherland to Cronulla „	7 $\frac{1}{2}$	37,005	261	326	9	— 74
Newcastle „	24 $\frac{1}{2}$	241,779	63,567	60,372	8,205	— 5,010
East to West Maitland „	4 $\frac{1}{2}$	38,089	5,224	4,541	1,290	— 607
Broken Hill „	9	75,221	18,275	19,515	2,688	— 3,928
Total... ..	190	5,121,586	1,365,631	1,143,949	174,055	+47,627

\* The positive sign indicates a profit, the negative a loss.

The total capital cost shewn in the preceding table was made up as follows:—

**CAPITAL COST OF NEW SOUTH WALES GOVERNMENT TRAMWAYS AS AT  
30th JUNE, 1911.**

Permanent Way.	Rolling Stock.	Power-house, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Total.
£2,950,466	£1,072,459	£893,783	£52,960	£149,526	£2,392	£5,121,586

The average cost per mile open was £15,550 for permanent way and £11,442 for all other charges, making a total of £26,992 per mile.

During the year 1910-11, eleven new extensions, amounting in all to a length of 24 $\frac{1}{4}$  miles, were opened for traffic. On the 30th June, 1911, one extension having a total length of 1 $\frac{1}{2}$  miles was under construction, and up to the same date ten additional extensions, amounting to about 11 $\frac{3}{4}$  miles, had been authorised for construction.

(e) *Sydney Electric Tramways.* The total route mileage of the city and suburban lines is 97 $\frac{1}{4}$ , of the North Shore line 16 $\frac{3}{4}$  miles, and of the Manly-The Spit line 6 $\frac{1}{2}$  miles, making the total length of the electric tramways in Sydney 120 $\frac{3}{4}$  miles. The current for the operation of these tramways is generated at the power-house at Ultimo, which has been erected at a total cost of £893,783, including the cost of the sub-stations and plant. The current generated at the power-house is partly continuous and partly alternating, and is used both for lighting and traction purposes. The standard voltage of the continuous current is 600; the alternating current is transmitted by means of high-tension cables to sub-stations, where it is converted to continuous current at the standard voltage. The total output of the power-house, for both lighting and traction purposes, during the year 1910-11, was 66,436,260 kilowatt-hours, of which the direct-current supply was 14,156,554, and the alternating current 52,279,706 kilowatt-hours. The output for traction purposes only was 61,163,079 kilowatt-hours. The following table gives particulars of the working of the electric tramways for each financial year from 1902 to 1911 inclusive:—

**NEW SOUTH WALES.—PARTICULARS OF SYDNEY ELECTRIC TRAMWAYS,  
1902 to 1911.**

Year ended 30th June.	Mileage Open for Traffic (Track).	Total Cost of Construction and Equipment.	Output of Power-house for Traction Purposes.	Tram Miles Run.	Passengers Carried.
	Miles.	£	Kilowatt-hours '000	No. '000.	No. '000.
1902 ... ..	52	1,285,014	15,472	6,175	63,517
1903 ... ..	113	2,610,287	25,542	11,184	100,341
1904 ... ..	118½	2,715,748	30,866	14,383	116,312
1905 ... ..	133½	3,124,140	30,197	14,783	122,626
1906 ... ..	139	3,259,936	32,316	15,352	135,300
1907 ... ..	141½	3,247,817	33,941	15,631	144,038
1908 ... ..	146½*	3,288,480	37,422	16,517	159,723
1909 ... ..	169½	3,756,198	42,299	17,813	173,733
1910 ... ..	183½	4,235,170	45,500	19,394	187,574
1911 ... ..	201½	4,585,240	61,163	21,120	214,975

Year ended 30th June.	Gross Revenue.	Working Expenses.	Net Revenue.	Number of Cars in Use.	Number of Persons Employed.
	£	£	£		
1902 ... ..	340,742	257,557	83,185	436	2,855
1903 ... ..	560,693	420,718	139,975	629	3,745
1904 ... ..	670,603	515,043	155,560	626	3,873
1905 ... ..	705,132	559,565	145,567	682	4,069
1906 ... ..	780,986	569,566	211,420	735	3,863
1907 ... ..	830,497	629,108	201,389	727	4,044
1908 ... ..	925,224	735,442	189,782	775	4,714
1909 ... ..	1,009,498	785,404†	224,094	906	5,514
1910 ... ..	1,092,582	888,415	204,167	939	6,065
1911 ... ..	1,256,672	1,033,229	223,443	985	6,667

\* 103½ route miles. † Including £50,500 written off for depreciation, etc.

The net revenue on capital invested was 4.87 per cent. in 1910-11 as against 4.82 per cent. in the preceding year.

(ii.) *Private Tramways.* There are two private tramway lines in New South Wales open for general traffic. (a) There is an electric tramway running from Rockdale to Brighton-le-Sands, a distance of one and a-quarter miles. This line was originally opened as a steam tramway in 1885, but was subsequently converted into electric. The total cost to the end of 1910 was £13,000. During that year the number of tram-miles run was 29,000. (b) A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of 3¼ miles, where it connects with the Parramatta River steamers, conveying passengers and goods to and from Sydney. This line was opened for traffic in 1883. In 1910 the number of tram miles run was about 18,700, and the number of passengers conveyed about 81,494.

Particulars regarding private tramways used for special purposes are not available.

(iii.) *Sydney Harbour Ferries.* As the ferry services on the waters of Port Jackson are mainly subsidiary to the suburban railway and tramway systems, it has been thought advisable to include them here rather than under shipping. Returns for the year 1910 were received from four companies, and shew that these companies had 62 boats in

commission which were licensed to carry a total of 37,367 passengers, or an average of 602 per boat and per trip. The total number of passengers carried during the year is stated as 26,028,347, an average of over 71,300 per day. In addition to the ordinary passenger traffic there are two lines providing for vehicular traffic, which afford the only rapid means of transit between the city and the northern suburbs. The four companies employed during the year a total of 758 persons. The capital expenditure to the end of 1910 amounted to £131,108, the gross revenue during 1910 to £242,219, and the expenditure to £158,305, thus giving a net revenue of £83,914. The services are well managed, and the boats constructed during recent years—double-ended screwboats—are claimed to be superior in size and equipment to boats employed on similar service in any part of the world.

3. **Victoria.**—In Melbourne there is a number of tramway systems carried on under the control of various authorities, the most important being the cable system worked by the Melbourne Tramway and Omnibus Company. There are also four lines of electric tramways, one running from St. Kilda to Brighton, a distance of five and one-eighth miles, belonging to the Government, and under the control of the Railway Commissioners; one from Flemington Bridge to the Saltwater River and Keilor Road, a distance of seven and a-quarter miles, run by a private company; one from Prahran to Malvern, four and a-half miles in length; and one from Chapel Street, Prahran, to Malvern *via* Dandenong Road, two and a-quarter miles in length, both controlled by a joint municipal trust. There is also a private cable tramway, two and a-quarter miles in length, between Clifton Hill and Preston. Two tramways worked by horses—one, seven miles in length, running from Sandringham to Cheltenham *via* Beaumaris, the other, one and a-half miles long, from Brunswick to Coburg, are privately owned, while three similar services are worked by the Melbourne Tramway and Omnibus Company, *viz.*, Victoria Bridge to Kew, Richmond Bridge to Hawthorn, and the Zoological Gardens lines. There is a short steam tramway, about one mile long, at Sorrento. There are also systems of electric tramways at Ballarat and Bendigo, constructed and run by a private company. A number of tramways has been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890. The work of constructing electric tramways at Geelong was commenced in January, 1911, and completed in January 1912, when trial runs were made. This system has a length of five and a-quarter miles of single track.

(i.) *Melbourne Cable Tramways.* The Melbourne Omnibus Company began its services by the initiation of omnibus services in 1869, and in 1878 the company changed its name to the Melbourne Tramway and Omnibus Company, with a view to the introduction of a tramway system in the city and suburbs of Melbourne. It was not, however, until the year 1883, when the Melbourne Tramway and Omnibus Company's Act was passed, that the necessary authority was given by Parliament for that purpose. Under this Act the company was empowered to construct tramways in the streets of Melbourne and suburbs, with the consent of the municipalities interested, who had the option of electing to construct the tramways themselves. All the municipalities decided to exercise the option conferred upon them, and, according to the provisions of the Act, a Tramways Trust was formed. This body, which is composed of seven members from the Melbourne City Council and one member each from the councils of eleven of the surrounding municipalities, received full power to construct tramways, and to borrow money for that purpose, secured on the municipal properties and revenues and on the tramways themselves. The Trust raised sufficient funds to pay for the construction of the tramway-tracks and the engine-houses from which the cables are worked. It was required by the original Act, as amended in 1892, to complete the tramways by the end of the year 1893, and to grant a thirty-two years' lease of the tramways to the company, dating from the 1st July, 1884—when the liability for interest on the loans commenced—and expiring on the 1st July, 1916. The company is required to find sufficient



capital to build the rolling-stock and to equip the lines and engine-houses with all necessary working requisites. The company pays to the Trust annually the interest due upon the loans raised, and also a sufficient sum as a sinking or redemption fund, to repay by its accumulation the principal of the loans raised by the Trust, and at the expiration of the lease must hand back the lines in good working order to the Trust. The expenses of the Trust were paid out of the loan up to the end of the year 1903, but since that date have been paid by the company to an amount not exceeding £1000 per annum, the municipalities being liable for the remainder. The total amount the Trust was empowered to buy was £1,650,000, which has been raised in London by means of debentures bearing interest at  $4\frac{1}{2}$  per cent. The premiums received amounted to £55,794, making a total of £1,705,794. This amount had been expended by the end of the year 1893, when further loan expenditure ceased. The first line—that to Richmond—was opened to traffic in November, 1885, and the work being rapidly pushed on, the others were opened at short intervals, and the whole system was completed in 1891. The complete system consists of forty-three and a-half miles of double-track cable lines, using constantly over ninety miles of wire rope, and four and a-half miles of double-track horse lines.

(a) *Particulars of Working, 1902 to 1911.* The subjoined statement shews the tram mileage, the number of passengers carried, and the revenue and expenditure for each year ended the 30th June from 1902 to 1911 inclusive:—

**MELBOURNE CABLE TRAMWAYS.—PARTICULARS OF WORKING, 1902 to 1911.**

Year ended the 30th June.	Tram Mileage.	Number of Passengers Carried.	Revenue.			Working Expenses.			
			Traffic Rec'pts.	Other.*	Total.	Wages.	Repairs & Main- tenance.	Other.*	Total.
	No.	No.	£	£	£	£	£	£	£
1902 ...	9,223,883	47,261,572	454,683	20,152	474,835	125,596	68,689	75,269	269,554
1903 ...	9,044,382	46,832,910	432,505	30,040	462,545	127,746	60,611	56,569	244,926
1904 ...	8,968,928	49,183,742	444,495	25,781	473,276	124,050	71,612	45,928	241,590
1905 ...	8,932,073	50,297,357	448,740	31,066	479,806	123,803	62,177	48,395	234,375
1906 ...	9,032,523	52,925,654	469,079	59,861	523,940	125,390	59,361	47,395	232,146
1907 ...	9,536,397	59,069,230	507,206	39,274	546,480	140,487	69,736	54,445	264,668
1908 ...	9,810,808	63,954,512	545,269	40,561	585,830	153,040	64,993	60,606	278,639
1909 ...	9,856,345	66,522,463	565,601	43,059	608,660	162,093	69,681	64,516	296,290
1910 ...	10,010,975	63,695,853	581,390	45,307	626,697	162,956	78,022	63,540	304,518
1911 ...	10,636,440	76,295,325	644,187	40,140	684,327	182,845	77,319	60,620	320,784

\* Including amounts on account of omnibus lines.

It may be noted that the "Wages" item in the above table does not represent all that is paid in wages by the company, as a considerable portion is merged in the item "Repairs and maintenance." The figures under working expenses classed as "Other" comprise feed, fuel, licenses, rates, insurance, law costs, stationery and office expenses, salaries of staff, and directors' and auditors' fees.

(ii.) *Electric Tramways.* There are in Melbourne four electric tramway systems, namely (a) the St. Kilda-Brighton line, (b) the North Melbourne tramways, (c) the Prahran-Malvern line, and (d) the Chapel Street-Malvern line *via* Dandenong Road.

(a) *The St. Kilda-Brighton Line.* Under the St. Kilda and Brighton Electric Street Railways Act 1904 the Board of Land and Works was authorised to construct a tramway from St. Kilda to Brighton. The amount of interest payable on the cost of the land acquired for the tramway was guaranteed by the municipalities of St. Kilda and Brighton for a period of twenty years, and authority was given by the Act to the municipalities to levy either a general or special rate not exceeding one shilling in the pound for the purpose of paying the guarantee. The profit, if any, during the first twenty years is to be set off in reduction of the guarantee. The line was opened for traffic in May,

1906, and the extension to Brighton Beach was opened in the following year. A proposal has been made to extend the line along the foreshore as far as Mordialloc. The capital cost to the 30th June, 1911, exclusive of rolling-stock, was £43,325, and of rolling-stock was £15,682, making a total of £59,007. The subjoined statement gives particulars of the working of this line for the financial years ended the 30th June, 1907 to 1911:—

#### ST. KILDA-BRIGHTON ELECTRIC STREET TRAMWAY, 1907 to 1911.

Year ended 30th June.	Mileage Open.	Capital Cost.	Car Mileage.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit or Loss.†
		£			£	£	£	£
1907	5.13	52,939	303,777	1,030,242	9,590	17,392*	1,980	—9,782
1908	5.13	57,523	335,007	1,146,484	10,374	14,299†	2,140	—6,065
1909	5.13	58,054	338,214	1,265,492	10,941	9,075	2,038	—172
1910	5.13	58,612	340,254	1,361,925	11,885	9,860	2,092	—67
1911	5.13	59,007	346,849	1,410,907	12,852	9,819	2,107	+ 926

\* Including an amount of £9941 for replacement of rolling stock, car-shed and equipment destroyed by fire. † Including an amount of £3311 for replacement of rolling-stock, etc., caused by fire. ‡ Profit is indicated by +, Loss by —.

The average fare paid per passenger was 2.19 pence in 1910-11 as against 2.08 pence in 1909-10. The gross revenue in 1910-11 was 8.89 pence per passenger car mile and £2505 per mile of track open. In the same year the percentage of working expenses on gross revenue was 76.4 as against 82.96 in the preceding year.

(b) *The North Melbourne Tramways*, extending through the northern suburbs to the Saltwater River and to Keilor Road, were constructed by a private company, and were opened for traffic towards the end of the year 1906.

(c) *The Prahran-Malvern Tramway*. This line has been constructed under the control of a trust, which consists of five members appointed by the cities of Prahran and Malvern. The total track mileage (including double track 4 miles) is 8½ miles, the total capital cost being £131,894. The current is supplied by the Melbourne Electric Supply Company Limited at a price varying according to the consumption of current and the price of fuel. Any surplus revenue, after providing for operating expenses, interest, sinking fund, and renewal reserve, is to be paid to the municipalities of Prahran and Malvern in proportion to the car mileage run in their respective districts. The lines were opened for traffic on 31st May, 1910. During the year ended 30th September, 1911, the current used for traction purposes was 698,848 kilowatt-hours, and the number of tram miles run was approximately 468,724, the number of passengers carried 3,805,843, the gross revenue £26,314, and the working expenses (excluding interest and renewals reserve) £16,518. The number of cars in use was 20, and the number of persons employed 95. A tramway 2¼ miles in length, and connecting the southern portions of Prahran and Malvern, which will be controlled by the Prahran-Malvern Tramway Trust, has been constructed and was opened for traffic early in 1912.

(d) *The Ballarat and Bendigo Electric Tramways* are under the control of a private company, and run along the main streets and to and from the outlying suburbs of the two cities. The total length of lines open for traffic is 22 miles.

(e) *Particulars of Working of all Electric Tramways, 1904 to 1911*. The following table gives particulars of the working of all electric tramways in Victoria for each year from 1904 to 1911 inclusive:—

## VICTORIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS, 1904 to 1911.

Year.	Mileage Open for Traffic.	Total Cost of Construction and Equipment.	Current Generated for Traction Purposes at Central Stations.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Employees.
	Miles.	£	Kilowatt-hrs. (000 omitted.)	No. (000 omitted.)	No. (000 omitted.)	£	£	No.	No.
1904	10½	106,553	331	326	1,214	†	†	12	55
1905	10½	115,309	463	433	1,749	†	†	12	86
1906	23½	191,882	703	699	2,759	†	†	53	210
1907	34	222,486*	1,790	1,793	7,037	48,554*	34,522*	78	379
1908	34½	272,180*	1,562*	1,963	7,519	69,296	55,740	95	338
1909	34½	290,815	2,185	1,904	7,497	66,148	50,820	95	312
1910†	34½	275,458*	2,314	1,930	7,889	54,727*	40,087*	97	317
1911	43½	406,815§	2,998	2,376	12,198	84,545§	56,562§	117	408

\* Incomplete. † Not available. ‡ Exclusive of Prahran-Malvern Tramway, which was opened for traffic on 31st May, 1910. § Exclusive of North Melbourne Tramway.

(iii.) *Private Tramways for Special Purposes.* There are in Victoria a number of tramways used for special purposes, chiefly in connection with the timber, mining, and milling industries. These lines have been constructed either under authority of the Department of Public Works, pursuant to Section 36 of the Tramway Act 1890, or under leases or licenses issued by the Department of Lands and Survey, pursuant to Sections 144 and 145 of the Land Act 1901. Particulars of these lines are too incomplete for publication.

4. *Queensland.*—In this State there is a system of electric tramways running through the streets of the city and suburbs of Brisbane and controlled by a private company which has its head office in London. The total length of the Brisbane system was thirty four and one-third miles at the end of the year 1911. There is also a number of tramways, having a total length of about 640 miles, run in connection with sugar mills. Particulars of Shire tramways have been given in the part of this section dealing with private railways (see pp. 740 and 741).

(i.) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. The total cost of construction and equipment to the end of the year 1909 was approximately £1,250,000. The following table gives particulars of these tramways for each calendar year from 1902 to 1911 inclusive:—

## QUEENSLAND.—BRISBANE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING, 1902 to 1911.

Year.	Mileage Open for Traffic.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	Number of Persons Employed
	Miles.	Kilowatt-hrs.	No.	No.	£	£	No.	No.
1902...	24½	3,852,308	3,015,548	18,125,302	125,451	73,473	88	390
1903...	27	3,975,355	3,157,574	18,376,000	126,526	77,539	100	400
1904...	29	4,154,797	3,243,686	18,452,704	126,647	76,586	104	430
1905...	30½	4,561,780	3,323,823	20,049,978	128,436	78,918	106	485
1906...	30½	4,370,004	3,323,657	22,052,424	141,414	78,493	107	550
1907...	30½	*	3,330,011	24,251,329	158,298	*	107	*
1908...	30½	4,915,202	3,367,972	27,221,466	177,567	*	107	619
1909...	30½	5,099,663	3,321,803	29,732,338	192,371	*	*	614
1910...	30½	5,441,032	3,524,036	32,419,276	214,265	*	119	654
1911...	34½	*	3,671,963	36,443,222	243,344	*	128	736

\* Not available.

(ii.) *Sugar-Mill Tramways.* There is a number of tramways in various parts of Queensland used in connection with the sugar-milling industry, chiefly for the purpose of hauling cane to the mills. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms.

5. **South Australia.**—Up to the year 1906 there was a number of horse tramways in the principal streets of Adelaide and suburbs run by various private companies. Power to acquire part of these lines, with a view to their electrification, was given to the Adelaide Corporation by the Municipal Tramways Trust Act 1906. In accordance with the provisions of the Act, a Trust consisting of eight members, of whom two were nominated by the Governor, two elected by the City Corporation, and two each by the Suburban Corporations and the District Councils, was formed in 1907, and a length of forty-nine route miles of horse traction tramways was purchased from the private companies at a cost of £283,357. On the 9th March, 1909, the electric car system was inaugurated on the Kensington route. At the end of July, 1911, a length of 39 route miles had been electrified and opened for traffic; the corresponding length of track opened being 71½ miles. The power-house is located at Port Adelaide, nine miles from the city. It is equipped with three 1500-kilowatt turbo-alternators generating current at 11,000 volts, which are stepped down and passed through rotary converters to direct current at 600 volts. The cost of construction and equipment on the 31st July, 1911, was £1,174,432. At the end of the financial year 1910-11 seventeen miles of track were under construction. The following table gives particulars of the tramways for the year ended 31st July, 1911.

**SOUTH AUSTRALIA.—ADELAIDE ELECTRIC TRAMWAYS.—PARTICULARS OF WORKING, 1910-11.**

Year.	Mileage Open for Traffic.	Capital Cost.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Employed
	Miles.	£	Kil'w'tt-hrs.	No.	No.	£	£	No.	No.
1911	39.1	1,174,432	5,986,791	3,620,222	31,345,576	225,425	160,922	130	975

\* Inclusive of price of current.

There are also in South Australia nineteen and three-quarter miles of Government horse tramways in country districts, worked in connection with the railway system, and six and one-quarter miles of private tramways used for passenger service. The subjoined statement gives various particulars of these lines:—

**SOUTH AUSTRALIA.—PARTICULARS OF HORSE TRAMWAYS, 1910-11.**

Particulars.	Length.	Gauge.	Nature of Traffic.
<b>GOVERNMENT TRAMWAYS.</b>			
	Miles.	ft. in.	
Moonta, Moonta Bay, and Hamley Flat	5½	5 3	Passengers and goods.
Gawler ... ..	1½	5 3	" "
Victor Harbour and Breakwater	1	5 3	" "
Dry Creek and Magazine	1	2 0	Explosives.
Magazine and Broad Creek	1½	2 0	" "
Port Broughton and Mundoorra	10	3 6	Passengers and goods.
<b>PRIVATE TRAMWAYS.</b>			
Port Adelaide and Alberton	2½	5 3	Passengers.
Glenelg and Brighton	4	4 8½	" "

6. **Western Australia.**—In this State there are a number of horse tramways, amounting in all to a length of twenty-nine and one quarter miles, which are the property of the Government. Of these the most important is the line between Roeburne and Cossack, constructed on a 2 ft. gauge and under the control of the Colonial Secretary's Department. The length of this line is fourteen and three quarter miles. The remaining fourteen and a-half miles belonging to the Government are made up of eleven short lengths varying from eight chains to four and a-half miles, worked in connection with the jetties at various ports for the purpose of providing the necessary communication between such jetties and the goods sheds or warehouses. Most of these short lines are leased at annual rentals, and are under the supervision of the Harbour Master. Their maintenance and improvement is in the hands of the Public Works Department. In addition to these Government lines there are electric tramway systems at Perth and Kalgoorlie carried on by private companies, and at Fremantle, under municipal control.

(i.) *Government Tramways.* Particulars as to the working of the Government horse-tramways or as to the rents received therefrom are not generally available. The following statement, however, shows particulars of the working of the Roeburne-Cossack line for the financial year ended the 30th June, 1911:—

**WESTERN AUSTRALIAN GOVERNMENT TRAMWAYS.—PARTICULARS OF THE  
ROEBURNE-COSSACK LINE, 1910-11.**

Mileage Open.	Cost of Construction and Equipment.	Gross Earnings.	Working Expenses.	Interest.	Loss.
14 $\frac{3}{4}$ .	£42,422	£3,293	£1,594	*	*

\* Not available.

(ii.) *Electric Tramways.* There are now five towns in Western Australia which enjoy the benefits of electric tramway systems, namely, Perth, Fremantle, Kalgoorlie, Boulder City, and Leonora.

(a) *The Perth Electric Tramways* were opened for traffic by a private company in 1899, and the system has since been extended to many of the outlying suburbs. On the 31st December, 1910, there were 22 $\frac{1}{2}$  miles of line open, the total cost of construction and equipment to that date being £476,772.

(b) *The Kalgoorlie and Boulder City Tramways* are also run by a private company, the first line being opened in 1902. At the beginning of 1904 legislative authority was given for the construction of lines in Boulder City and suburbs, and in November, 1904, the last section of the Boulder system was completed. At the end of the year 1910 the total mileage of the whole system—in Kalgoorlie and Boulder City—amounted to 19 miles, the total cost of construction and equipment being approximately £449,106.

(c) *The Fremantle Tramways* were opened in November, 1905, under the control of the municipality. On the 31st August, 1911, there were 8 $\frac{3}{4}$  miles of line open for traffic, the cost of construction and equipment at that date being £102,479.

(d) *The Leonora-Gwalia Tramway*, three miles in length, formerly a steam tramway, was opened for traffic by electrification on 5th October, 1908.

(e) *Particulars of Working of all Electric Tramways, 1901 to 1910.* The subjoined table shews, so far as returns are available, particulars of the working of all electric tramway systems in the State for each year from 1901 to 1910 inclusive:—

## WESTERN AUSTRALIA.—PARTICULARS OF ELECTRIC TRAMWAYS, 1901 to 1910.

Year.	Mileage Open for Traffic.†	Total Cost of Construc- tion and Equip- ment.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Em- ployed.
	Miles.	£	Kilowatt-hrs.	No.	No.	£	£	No.	No.
1901	16½	367,037	...	721,056	...	46,270	26,673	30	...
1902	17	380,861	...	788,120	...	56,157	32,464	30	...
1903	36½	£ 1,000,000	*1,561,804	1,396,888	8,226,926	99,794	68,567	59	†70
1904	42		*1,831,385	1,590,925	9,833,212	118,269	69,586	62	266
1905	54		*2,695,277	2,190,988	12,861,664	147,455	91,006	89	373
1906	54½		*3,076,810	2,325,378	13,595,098	152,678	92,379	89	336
1907	45½		4,049,980	2,247,889	14,050,086	143,403	89,266	89	330
1908	47½		4,065,616	2,316,325	13,136,065	142,182	91,770	89	354
1909	50		3,952,386	2,304,616	13,579,603	144,320	98,236	101	366
1910	53	1,035,357	**3,741,628	2,139,524	12,420,830	139,824	88,110	106	381

\* Exclusive of Kalgoorlie tramways, for which returns are not available. † Exclusive of Perth tramways. § Not available. ‡ Including returns for the Fremantle tramways for a period of ten months ended the 31st August, 1906, at which date the municipal financial year ends. † For the years 1907 to 1910 inclusive, miles of route are given; for previous years the figures represent miles of single track. \*\* Exclusive of Leonora Tramway.

7. *Tasmania.*—In Hobart there is a system of electric tramways, amounting in all to a length of nine miles, owned by a private company. Under the authority of the Launceston Tramway Act of 1906 the Launceston City Council entered into an agreement with a private company for the construction of a system of electric tramways in the city and suburbs of Launceston. The agreement provided that the company was to run the tramways for a period of twenty-five years, when the Council could purchase the lines and stock at cost price; the electric power required was to be supplied by the Council. This agreement, however, lapsed, and the Council has constructed the tramways, and is running them as a municipal undertaking. The system, which was opened on the 16th August, 1911, has a route mileage of about 5½ miles. A short extension of half-a-mile to Trevallyn is under consideration. The total cost of construction and equipment to the end of October, 1911, amounted to £52,162. Ten cars with motors and four trailers were in use; and the number of employees totalled 42.

(i.) *Hobart Electric Tramways.* These tramways were opened for traffic in 1893, the total cost of construction and equipment to the 31st December, 1910, being £91,788. The following table gives particulars of the working of this system for each year from 1901 to 1910, inclusive:—

## TASMANIA.—PARTICULARS OF WORKING OF HOBART ELECTRIC TRAMWAYS, 1901 to 1910.

Year.	Mileage Open for Traffic.	Total cost of Construc- tion and Equip- ment.	Current Generated	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Per- sons Em- ployed.
	Miles.	£	Kilowatt- hours	No.	No.	£	£	No.	No.
1901	9	90,000	...	321,633	1,734,120	16,097	11,735	20	90
1902	9	90,000	...	321,533	1,848,104	17,319	11,820	20	90
1903	9	90,000	...	332,986	1,962,617	18,326	11,106	21	91
1904	9	90,000	378,857	330,451	2,045,629	19,855	10,906	21	94
1905	9	90,000	455,833	332,135	2,327,448	20,560	11,260	22	111
1906	9	90,000	460,315	341,638	2,199,759	20,261	10,968	23	110
1907	9	90,000	607,324	445,505	2,504,773	24,421	13,635	22	102
1908	9	90,000	622,207	453,773	2,677,018	26,789	14,446	23	105
1909	9	90,824	748,878	490,410	2,772,047	27,502	15,682	25	105
1910	9	91,788	746,377	518,024	3,074,782	29,490	16,820	25	108

8. **Electrical Traction in Commonwealth, 1910-11.**—The subjoined table gives particulars of electric tramways for each State and the Commonwealth. The returns for Tasmania, for the Ballarat and Bendigo tramways in Victoria, for the Rockdale-Brighton-le-Sands in New South Wales, and for the Perth and Kalgoorlie tramways in Western Australia, are for the calendar year 1910; for the Brisbane tramways the returns are for the calendar year 1911; and for other tramways the returns are, generally, for the financial year 1910-11:—

**ELECTRIC TRAMWAYS IN COMMONWEALTH, 1910-11.**

State.	Mileage (Route) open for Traffic.	Capital Cost.	Current Gene- rated.	Tram Miles Run.	No. of Passen- gers Carried.	Gross Revenue.	Work- ing Ex- penses.	No. of Cars, Motors, and Trail'rs	No. of Em- ployees
	Miles.	£	Kilowatt- hours (,000 omitted).	No. (,000 omitted).	No. (,000 omitted).	£	£	No.	No.
N.S.W. ....	122	4,598,240	61,253	21,149	214,975	1,258,696	1,035,215	992	6,675
Victoria ....	44	7406,815	2,998	2,376	12,198	784,545	756,562	117	408
Queensland ....	34	†	†	3,672	36,443	243,344	†	128	736
South Australia	39	1,174,432	5,987	3,620	31,346	225,425	160,922	130	975
West. Australia	53	1,035,357	3,742	2,140	12,421	139,824	88,110	106	381
Tasmania* ....	9	91,788	746	518	3,075	29,490	16,820	25	108
Commonwealth	301	7,306,632	74,736	33,475	310,458	1,981,324	1,357,629	1,498	9,283
		§	§			§	§		

\* Exclusive of Launceston Tramways. † Exclusive of North Melbourne Tramway. ‡ Not available. § Incomplete.

## SECTION XVIII.

## POSTS, TELEGRAPHS, AND TELEPHONES.

## § 1. Posts.

1. **The Commonwealth Postal Department.**—Under the provisions of section 51 of the Commonwealth Constitution Act the Commonwealth Parliament was empowered to make laws with respect to the control of the postal, telegraphic, and telephonic services in Australia, and by proclamation, made under section 69 of the same Act, the six separate State Post and Telegraph Departments were amalgamated and taken over by the Federal Executive on the 1st March, 1901. On the 1st December following, the Commonwealth Post and Telegraph Act 1901 came into operation, and the provisions of the various State Acts referring to the postal and telegraphic services thereby ceased to apply; it was, however, specially provided by the Act of 1901 that until such provisions should be revoked by the Governor-General, all regulations in force and all rates and charges levied under any State Act should continue in force and be applied in the same manner as if such State Act were not affected by the Commonwealth Act. The administration of the Act of 1901 was placed in the hands of a Postmaster-General, a responsible Minister with Cabinet rank, and of a Secretary having chief control of the Department throughout the Commonwealth under the Postmaster-General, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General. The rates and charges levied in each State for the transmission of letters, telegrams, and postal articles at the date of Federation remained in force until the Post and Telegraph Rates Act came into operation on the 1st November, 1902. This Act secured uniformity throughout the Commonwealth in the rates charged for the conveyance of newspapers by post, and for the transmission of telegrams, but did not alter the charges made in the individual States for the transmission of letters, cards, parcels, and packets. Uniform postage rates now exist in all the States under the Postal Rates Act of 1910, which came into operation by proclamation on the 1st May, 1911. (See paragraph 7 hereof.)

2. **Postal Services in Early Days.**—The first Australian office for postal purposes was established in Sydney by Lieutenant-Governor Paterson under a Government order dated the 25th April, 1809, and the site selected was in High-street (now known as George-street) at the residence of Mr. Isaac Nicholls. The duties of this office were extended in June, 1810, by Governor Macquarie, who established it as a regular post office, at which all parcels and letters, either colonial or foreign, were to be deposited previous to their distribution. After the establishment of this office in Sydney very little improvement in regard to postal matters took place for a number of years, and it was not until 1825 that an Act was passed by Sir Thomas Brisbane, with the advice of the Council, "to regulate the postage of letters in New South Wales." A proclamation under this Act was issued, fixing the rates of postage and the salaries and allowances of postmasters, and inviting tenders for the conveyance of mails between Sydney and Parramatta, Windsor and Liverpool; between Liverpool and Campbelltown; from Parramatta to Emu Plains, and thence to Bathurst. It was not, however, until 1828 that the provisions of the Act were put into full force and a system of general post-office communication was established. In that year rates of postage were fixed, depending



upon the distance and the difficulty of transmission. The lowest single inland rate was threepence and the highest one shilling, the postage on a letter increasing according to its weight, the minimum fee being charged on letters not exceeding a quarter of an ounce. The fee for newspapers was one penny. Letters from New South Wales to Van Diemen's Land were charged threepence each, while other letters by ship were charged fourpence each single rate, and sixpence for any weight in excess. The Act of 1825 was amended by the Postal Act of 1835, under which the Governor was authorised to establish a General Post Office in Sydney, and to make rules and regulations, and to fix rates for the conveyance of letters and parcels. In 1837 a post office was established in Melbourne, and a fortnightly service was established between that city and Sydney. In the same year stamps were introduced in the form of stamped covers or wrappers, which are said to have been the first postage stamps ever used. Post offices were established and a postal service was organised in the other States of the Commonwealth shortly after their settlement, and a tolerably good overland service by horses and mail coaches soon developed between the capitals and the up-country towns, villages, and stations as settlement progressed.

**3. Development of Postal Services.**—In 1841 the number of post offices open in Australia was 102, situated mainly in New South Wales and Tasmania. At the end of ten years 101 post offices were open in New South Wales, 44 in Victoria, 72 in South Australia, and 51 in Tasmania. From the year 1851 onwards a remarkable increase in the number of post offices in Australia took place, until, in 1891, the number open on the mainland and Tasmania totalled 4463, of which 1384 were situated in New South Wales, 1729 in Victoria, 307 in Queensland, 629 in South Australia, 86 in Western Australia, and 328 in Tasmania.

On the 31st December, 1910, the postal business had increased to such an extent that 5506 post offices were open for business, of which number 1911 were situated in New South Wales, 1655 in Victoria, 558 in Queensland, 648 in South Australia, 343 in Western Australia, and 391 in Tasmania.

**4. State, Interstate and Oversea Postages for whole Commonwealth, 1901 to 1910.**—In the following table the matter dealt with is divided into (i.) matter posted in the Commonwealth for delivery within the Commonwealth, (ii.) matter received from places outside the Commonwealth, (iii.) matter despatched to places outside the Commonwealth, and (iv.) total postal matter dealt with by the Commonwealth Postal Department 1901 to 1910, but excluding Interstate Excess.

**STATE, INTERSTATE, AND OVERSEA POSTAGES FOR WHOLE COMMONWEALTH,  
1901 to 1910.**

Year.			Letters and Postcards.	Newspapers.	Parcels.	Packets.
POSTED FOR DELIVERY WITHIN THE COMMONWEALTH (.000 OMITTED).						
1901	...	...	210,205	92,383	1,253	36,395
1902	...	...	231,726	87,468	1,339	36,783
1903	...	...	232,865	78,521	1,515	35,659
1904	...	...	243,869	82,011	1,640	38,897
1905	...	...	271,492	86,205	1,807	45,466
1906	...	...	296,410	91,589	2,112	49,095
1907	...	...	303,069	92,223	2,363	64,786
1908	...	...	329,013	96,359	2,508	68,569
1909	...	...	347,514	107,516	2,741	76,348
1910	...	...	363,893	118,674	2,956	76,991

STATE, INTERSTATE, AND OVERSEA POSTAGES, FOR WHOLE COMMONWEALTH,  
1901 to 1910.—Continued.

Year.	Letters and Postcards.	Newspapers.	Parcels.	Packets.
OVERSEA RECEIVED (,000 OMITTED).				
1901 ... ..	5,682	7,283	81	2,876
1902 ... ..	6,341	7,342	86	3,181
1903 ... ..	6,292	7,115	90	2,821
1904 ... ..	7,863	7,495	99	3,258
1905 ... ..	9,689	8,195	94	3,536
1906 ... ..	9,806	7,957	105	2,699
1907 ... ..	9,541	8,423	119	3,828
1908 ... ..	13,309*	8,141	107	4,429
1909 ... ..	14,092	9,145	106	3,620
1910 ... ..	15,729	10,042	119	3,852

OVERSEA DESPATCHED (,000 OMITTED).				
1901 ... ..	4,945	3,055	35	1,319
1902 ... ..	5,072	3,440	44	1,371
1903 ... ..	6,024	4,449	47	1,463
1904 ... ..	7,147	4,649	50	1,974
1905 ... ..	8,552	4,790	54	2,170
1906 ... ..	10,394	4,860	60	2,169
1907 ... ..	10,894	5,548	64	2,356
1908 ... ..	10,624	5,400	68	2,191
1909 ... ..	11,279	5,712	70	2,406
1910 ... ..	13,039	6,003	79	3,076

TOTAL POSTAL MATTER DEALT WITH BY THE COMMONWEALTH POSTAL  
DEPARTMENT 1901 to 1910, BUT EXCLUDING INTERSTATE EXCESS  
(,000 OMITTED).

1901 ... ..	220,853	102,727	1,369	40,161
1902 ... ..	248,966	98,415	1,469	41,013
1903 ... ..	245,637	90,632	1,651	40,221
1904 ... ..	259,852	94,299	1,791	44,360
1905 ... ..	290,309	99,134	1,959	51,175
1906 ... ..	317,049	103,793	2,270	53,961
1907 ... ..	332,301	105,857	2,554	72,045
1908 ... ..	356,176	110,269	2,680	76,041
1909 ... ..	372,496	119,931	2,898	81,909
1910 ... ..	392,851	132,415	3,155	83,599

\* The increase is partly due to the fact that in New South Wales the method of counting was different in previous years.

5. State, Interstate and Oversea Postages for each State, 1910.—The following table shews separately for each State the postage matter dealt with in 1910 under the same classification adopted in the preceding paragraph :—

## STATE, INTERSTATE, AND OVERSEA POSTAGES FOR EACH STATE, 1910.

State.	Letters and Postcards.	Newspapers.	Parcels.	Packets.
POSTED FOR DELIVERY WITHIN COMMONWEALTH (,000 OMITTED).				
New South Wales ...	140,744	57,611	1,421	34,933
Victoria ...	125,160	23,918	556	15,063
Queensland ...	37,215	15,671	581	13,143
South Australia ...	24,221	5,985	179	8,317
Western Australia ...	23,435	6,040	159	2,642
Tasmania ...	13,118	9,449	60	2,893
Commonwealth...	363,893	118,674	2,956	76,991

## STATE, INTERSTATE AND OVERSEA POSTAGES FOR EACH STATE, 1910.—(Continued).

State.	Letters and Postcards.	Newspapers.	Parcels.	Packets.
OVERSEA RECEIVED (,000 OMITTED).				
New South Wales ...	6,654	2,597	35	1,015
Victoria ...	4,664	3,823	32	1,274
Queensland ...	2,042	1,654	20	548
South Australia ...	685	612	11	306
Western Australia ...	1,159	717	15	411
Tasmania ...	525	639	6	298
Commonwealth...	15,729	10,042	119	3,852
OVERSEA DESPATCHED (,000 OMITTED).				
New South Wales ...	5,484	2,527	40	1,542
Victoria ...	3,492	2,556	20	1,194
Queensland ...	1,097	319	8	101
South Australia ...	882	183	3	124
Western Australia ...	1,112	214	6	55
Tasmania ...	972	204	2	60
Commonwealth...	13,039	6,003	79	3,076

6. **Postal Facilities, 1910.**—The subjoined statement shews the number of post and receiving offices, the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in the Commonwealth at the end of the year 1910. It will be observed that the most sparsely populated States have the greatest number of offices in comparison with their population, but in order to judge the relative extension of postal facilities the area of country to each office must also be taken into account.

**SQUARE MILES OF TERRITORY AND NUMBER OF INHABITANTS TO EACH POST AND RECEIVING OFFICE, 1910.**

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of post and receiving offices...	2,437	2,420	1,380	738	430	429	7,834
Number of square miles of territory to each post office in State ...	127	36	486	1,225	2,270	61	380
Number of inhabitants to each office...	675	538	434	556	644	452	565
Number of inhabitants per 100 sq. miles	530	1,481	89	45	28	739	149

7. **Rates of Postage.**—Prior to the operation of the Postal Rates Act of 1910, the charges made for the postage of newspapers and parcels, and of interstate and foreign letters, were the same in all the States of the Commonwealth. The rates for the transmission of inland letters, however, were not uniform, the Post and Telegraph Act 1901 having specially provided that the rates and charges levied in any State should continue in force. The last-mentioned regulation, however, was repealed by the Postal Rates Act of 1910, which came into force by proclamation on 1st May, 1911.

The following rates on letters, newspapers, and certain other postal articles posted in the Commonwealth for delivery therein came into force on the 1st May, 1911, the date of proclamation of the operation of the Postal Rates Act of 1910 :—

**POSTAL RATES OF CERTAIN ARTICLES POSTED IN THE COMMONWEALTH FOR  
DELIVERY THEREIN ON AND AFTER 1st MAY, 1911.**

Postal Articles.	Rates of Postage.
LETTERS ... ..	1d. per $\frac{1}{2}$ ounce.
LETTER-CARDS ... ..	{ Single, 1d. each. Reply, 1d. each half.
POST CARDS ... ..	{ Single, 1d. each. Reply, 1d. each half.
PRINTED PAPERS AS PRESCRIBED ... ..	$\frac{1}{2}$ d. per 2 ounces or part of 2 ounces.
BOOKS PRINTED OUTSIDE AUSTRALIA ... ..	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces.
BOOKS PRINTED IN AUSTRALIA ... ..	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces.
MAGAZINES.—That is to say—	
(a) magazines, reviews, serials, and other similar publications printed and published in Aus- tralia in numbers at intervals not exceed- ing three months ... ..	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces.
(b) magazines, reviews, serials, and other similar publications (including newspapers) printed and published outside Australia in numbers at intervals not exceeding three months ... ..	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces.
HANSARD.—That is, reports of Parliamentary Debates printed and published by the authority of the Commonwealth or of a State ... ..	$\frac{1}{2}$ d. per 12 ounces or part of 12 ounces.
COMMERCIAL PAPERS, PATTERNS, SAMPLES, AND MERCHANDISE AS PRESCRIBED ... ..	1d. per 2 ounces or part of 2 ounces.
NEWSPAPERS (without condition as to the number contained in each addressed wrapper) posted by registered newspaper proprietors, or by news- vendors, or returned by an agent or news vendor to the publishing office ... ..	1d. per 20 ounces on the aggregate weight of newspapers so posted by any one person at any one time.
ALL OTHER NEWSPAPERS ... ..	For each newspaper, $\frac{1}{2}$ d. per 10 ounces or part of 10 ounces.

Whilst the bookkeeping sections of the Constitution Act (see Section XIX., § 1, hereinafter) were in force, each State had necessarily to use its own postage stamps, and stamps sold in one State were only allowed to be used on letters posted in that State. The necessity for this arrangement disappeared with the change in the keeping of the Commonwealth accounts, and since the 14th October, 1910, stamps of any State can be affixed to letters, irrespective of the State in which they are posted. With the object of issuing a uniform postage stamp for the Commonwealth, the Postmaster-General has adopted a design for a stamp containing characteristic features of Australia, and arrangements are now being made for printing and issue at an early date.

(i.) *Letters.* Under the Postal Rates Act of 1910, the charge (1d. for every  $\frac{1}{2}$  oz.) for letters posted for delivery within the Commonwealth is now uniform throughout all States. Previous to the 1st May, 1911, various local and interstate rates were in operation within the States. The postage to the United Kingdom was reduced in January, 1891, from sixpence per half-ounce *via* the Red Sea, and fourpence *via* the Cape of Good Hope, to the uniform rate of twopence halfpenny. In 1891 the States were represented at the Congress of the Universal Postal Union held in Vienna, and on the 4th July a convention was signed on their behalf, by which they joined the Union from the 1st October of that year. On that date the rate of postage to all British possessions and to foreign countries included in the Union was reduced to twopence halfpenny. The present charge for postage of interstate letters and of letters to the United Kingdom and to British possessions is now uniformly one penny per half ounce throughout the Commonwealth; the rate on letters to foreign countries (with the exception of

New Hebrides, Banks and Torres Islands, where the rate is twopence per half-ounce) is twopence halfpenny for each half-ounce.

(ii.) *Newspapers.* The different rates charged for the carriage of newspapers in the various States, prior to Federation, continued after the control of the Postal Departments had been taken over by the Commonwealth, until the 1st November, 1902, when a uniform rate was imposed by the Post and Telegraph Rates Act 1902. At present the rates on all newspapers posted for delivery within the Commonwealth (without condition as to the number contained in each addressed wrapper posted) by registered newspaper proprietors, or by newsvendors, or returned by newsvendor or agent to the publishing office, is one penny per twenty ounces on the aggregate weight. On all other registered newspapers posted within the Commonwealth for delivery therein the charge is a halfpenny per ten ounces for each newspaper. At the end of the year 1910 there were in all 1740 publications registered in the Commonwealth under section 29 of the Post and Telegraph Act 1901 for transmission by post as newspapers. The charge on postage of registered newspapers for transmission to the United Kingdom is one penny for each newspaper not exceeding eight ounces in weight by the ordinary route, and one penny for each newspaper not exceeding sixteen ounces in weight by the All-Sea Route. To other parts of the world the rate is one penny up to four ounces, and a halfpenny for every additional two ounces. Newspapers which are not registered are charged at the same rates as other printed papers.

(iii.) *Parcels.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 ft. in length and girth combined. The rate for the inland postage of parcels is sixpence up to 1 lb., and then threepence for every additional pound. For interstate transmission the rate is eightpence up to 1 lb., and then sixpence per lb., and for transmission to the United Kingdom the rate is one shilling up to 1 lb., and sixpence for every additional pound.

(iv.) *Packets.* The regulations for the conveyance of packets vary in the several States. The ordinary rate is one penny for each two ounces. Packets must not as a rule exceed 2 ft. in length, 1 ft. in breadth or depth; or, if in a roll, 2 ft. 6 in. in length. Special rates are allowed for the conveyance of commercial papers, patterns, samples, etc.

**8. Registered Letters.**—Under section 38 of the Post and Telegraph Act 1901 provision is made for the registration of any letter, packet, or newspaper upon payment of the prescribed fee, and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying the prescribed fee (see hereunder) in advance at the time of registration in addition to the registration fee.

(i.) *Registration Fees.* The fee payable upon registration of an article is threepence, and the fee payable in order to obtain an acknowledgment of the delivery of the registered article is twopence halfpenny in addition. Registered letters must, as a rule, be handed in at least half-an-hour before the closing of the mails.

(ii.) *Number of Registered Letters Posted, 1910.* The subjoined table shews the number of registered letters posted in each State during the year 1910, classified according to the places to which they were despatched for delivery:—

#### NUMBER OF REGISTERED LETTERS POSTED DURING 1910.

(,000 OMITTED.)

State.	Posted in each State for Delivery within that State.	Posted in each State for Delivery in other States.	Posted in each State for Delivery in Places outside the C'wealth.	Total.
New South Wales ...	723	75	54	852
Victoria ...	869	92	56	1,017
Queensland ...	391	58	27	476
South Australia ...	196	30	13	239
Western Australia ...	302	31	28	361
Tasmania ...	183	18	5	206
Commonwealth ...	2,664	304	183	3,151

**9. Ocean Mail Services.**—Regular steamship communication between Australia and Europe was established in 1852 by a service run by the Peninsular and Oriental Company between Singapore and Sydney, *via* King George's Sound, Adelaide, and Melbourne. This service was inaugurated in September, 1852, by the arrival at Melbourne of the "Chusan," and was continued until 1854, when it was stopped in consequence of the Crimean War; in 1856 a line of steamers was again started, and the service was carried on by the Peninsular and Oriental Company, in conjunction with the Royal Mail Company, for some years.

(i.) *Mail Route via San Francisco.* The service *via* the Red Sea did not at that time give much satisfaction to the public, and was looked upon with a certain amount of disfavour in New South Wales and New Zealand. The effect was to stimulate the colonists to agitate for an improved service, and proposals were made for the establishment of a line of mail packets from Sydney to Panama *via* Wellington, by rail across the isthmus, and thence to Great Britain. The result was that in 1866 the line was started, and continued in operation until the end of 1868, when it was terminated through the failure of the company by which it had been carried out. The completion of the railway across the American continent in 1869, with its western terminus at San Francisco, opened up a new and agreeable route, and in that year a monthly service was inaugurated by the Union Steamship Company, in conjunction with the Pacific Steamship Company, from Sydney to San Francisco *via* Auckland. This service was subsidised to the extent of £37,000 per annum, of which New South Wales paid £25,750 and New Zealand £11,250, and was continued until November, 1890, when a new contract was entered into and the amount of the subsidy largely reduced, the amount of the contribution being based upon the weight of mail matter carried. Various extensions of the contract were made, but the last agreement made between the New Zealand Government and the Oceanic Steamship Company of San Francisco expired on the 10th November, 1906, and has not since been renewed. From that date mails were carried at Postal Union rates until the 12th April, 1907, when the service was discontinued. At present mails to and from Europe *via* San Francisco are carried by the Union Steamship Company, which receives a subsidy from the New Zealand Government, and carries Australian mails at Postal Union rates. A four-weekly service has been established.

(ii.) *Route via Suez Canal.* The establishment of a mail route *via* America had the effect of stimulating the steamship owners who were engaged in the service *via* Suez, and from that time there was a marked improvement in the steamers, as well as in the punctuality and speed with which the mails were delivered. The Peninsular and Oriental Company have, with very few interruptions, carried mails from the Australian States almost from the inception of the ocean steam service. Towards the end of 1878, the Orient-Pacific Company commenced carrying mails between Australia and the United Kingdom, and has continued to do so ever since. New contracts were entered into with the Peninsular and Oriental and the Orient-Pacific Companies for a weekly service, subsidised by the Imperial Government and by all the States of Australia, to commence on the 1st February, 1898, for a period of seven years. The total amount of the subsidy was £170,000 per annum, of which £98,000 was payable by the Imperial Government and £72,000 by the Australian States in proportion to their population. These contracts expired on the 31st January, 1905, and pending negotiations for a new contract the mails were carried at poundage rates. On the 1st February, 1905, the Peninsular and Oriental Company commenced its eighth Australian contract with the British Postmaster-General on behalf of the Imperial Post Office only, and in connection with the India and China mail services, one payment being arranged for the whole service, and the Commonwealth Government not, as hitherto, being a party to the contract. Mails are still carried from Australia by the Peninsular and Oriental Company, but are carried at Postal Union rates and not under contract with the Commonwealth. On the 25th April, 1905, the Orient-Pacific Company concluded a new contract with the Commonwealth Government for a fortnightly service between England and Australia. The subsidy was at the rate of £124,880 per annum. This contract has now been replaced by the new mail contract referred to in the next sub-section hereof. Fremantle

has, since the year 1900, been the first and last port of call for the mail steamers to Europe, in lieu of Albany, the original port of call. The Peninsular and Oriental and Orient-Pacific Companies' steamers sail alternately every week both from London and Australia conveying the homeward and outward mails.

(a) *The New Mail Contract.* On the 1st January, 1906, tenders were invited by the Commonwealth Postmaster-General for a fortnightly mail service between Adelaide and Brindisi, to alternate with a similar service to be provided by the Imperial Government, and a contract was entered into with Sir James Laing and Company Limited, providing for a service at an annual subsidy of £125,000. This contract, however, fell through, and new tenders were accordingly called for. On the 15th November, 1907, an agreement was entered into with the Orient Steam Navigation Company Limited providing for a fortnightly service for a period of ten years, commencing in February, 1910. The mail service is to be carried out by existing vessels belonging to the company and by five new mail ships, which have been specially built, and which are each over 12,000 tons gross registered tonnage and of not less than seventeen knots speed. Two more new vessels were to be added within eighteen months and six years respectively from February, 1910, and under this provision the "Orama" entered into running during November, 1911. The vessels are to call at Fremantle, Adelaide, Melbourne, Sydney, and Brisbane, and at least six of them at Hobart during the months of February to May inclusive. The voyage from Taranto to Adelaide is to be completed within twenty-six days fourteen hours, and from Adelaide to Taranto within twenty-seven days two hours, but the latter period may be exceeded by thirty-six hours during the prevalence of the south-west monsoon. The amount of the subsidy is fixed at £170,000 per annum; but, if the earnings of the company be decreased, or the expenses increased, by reason of any Commonwealth shipping legislation passed subsequently to the date of the agreement, to the extent of not less than £5000 a year, the contractors have the right to terminate the agreement unless the subsidy is increased. Insulated space of not less than 2000 tons of forty cubic feet is to be provided in each of the new vessels, and the freights are not to exceed one halfpenny per lb. for butter and sixty shillings per ton for fruit. White labour only is to be employed, and no discrimination is to be made between unionists and non-unionists. If before or during the sixth year of the period of the contract an accelerated service is provided by any competing line of mail ships, the contractors must, if so required by the Postmaster-General, provide a service equal to the competing service, at an increased subsidy, to be determined by agreement or arbitration. The Commonwealth flag must be flown on the mail ships, which the Commonwealth has the right to purchase at a valuation at any time. Within six months of the Postmaster-General establishing a permanent wireless telegraphy station at Rottnest Island, or at any point on the coast between Fremantle and Brisbane, the company must fit the mail ship with wireless telegraphy installations. The new service was inaugurated on the 11th February, 1910.

(b) *French and German Subsidised Mail Services.* Vessels belonging to the Messageries Maritimes and the Norddeutscher Lloyd, which are under contract respectively with the French and German Governments to convey mails monthly between Marseilles and New Caledonia and between Bremen and Sydney, *via* Genoa, also carry mails for the Commonwealth Government from Australia to Europe at Postal Union rates. The Messageries Maritimes service commenced in November, 1882; the amount of the annual subsidy granted by the French Government is £120,000. The first contract for the establishment and maintenance of a mail steamship line between Germany and Australia was made between the Imperial German Government and the Norddeutscher Lloyd in 1885, and the service was inaugurated in July, 1886, with the steamer "Salier."

(iii.) *Route via Vancouver and Canadian-Pacific Railway.* During the year 1893 a direct monthly service was started between Sydney and Vancouver, in British Columbia, *via* Wellington, in New Zealand, and thence to Liverpool *via* the Canadian-Pacific Railway, the New South Wales Government paying an annual subsidy of £10,000 for the maintenance of this service for a period of three years. In 1896 the

agreement was renewed for a further period of three years, and in 1899, was again renewed for four years, subject to the same terms and conditions, except that the route was *via* Brisbane instead of Wellington. The contract was further extended, at an increased subsidy, from time to time until the 31st July, 1911, at a subsidy of £26,626 per annum. This subsidised service has now been discontinued. Mails for Canada are forwarded *via* New Zealand through Sydney at poundage rates.

(iv.) *Other Ocean Mail Services.* In addition to the mails *via* the Suez Canal, a number of other services, both regular and irregular, are maintained between the Commonwealth and various parts of the world, and also between the principal ports in the various States and a number of small ports in the less settled parts of the Commonwealth which are inaccessible by rail. The following statement gives a summary, in so far as returns are available, of all mail services maintained between the Commonwealth and other countries and between ports in the Commonwealth. The amounts of subsidies specified are the amounts payable per annum unless otherwise stated.

#### SUMMARY OF MAIL SERVICES, COMMONWEALTH OF AUSTRALIA, 30th JUNE, 1911.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. <i>To and from Europe, via Suez—</i> (a) Peninsular and Oriental* ...	Fortnightly	Adelaide, Fremantle and London, <i>via</i> Brindisi and Marseilles	Subsidised by Imperial Govt. Mails from Aust. at Postal Union rates
(b) Orient-Pacific* ...	"	Adelaide, Fremantle & London, <i>via</i> Taranto	Subsidised. Date of agreement, 15th Nov., 1907. Term from Feb., 1910. Amt. of subsidy £170,000. Subsidy paid by all States on a <i>per capita</i> basis.
(c) Messageries Maritimes ...	13 voyages yearly	New Caledonia and Marseilles, <i>via</i> Fremantle and Adelaide	Subsidised by French Govt. Mails from Aust. at Postal Union rates.
(d) Norddeutscher Lloyd ...	"	Fremantle, Adelaide & Bremen, <i>via</i> Genoa	Subsidised by German Govt. Mails from Aust. at Postal Union rates.
2. (a) <i>To and from Europe, via Vancouver—</i> Canadian Australian Steamship Co.	Every four weeks	Sydney and Vancouver, B.C., <i>via</i> Auckland, Fiji, Honolulu, and once every eight weeks to Fanning Island	Poundage rates.
(b) <i>To and from Europe, via San Francisco—</i> Union Steamship Company	"	Sydney, Wellington and San Francisco	Subsidised by New Zealand Govt. Mails from Aust. at Postal Union rates.
3. <i>To and from New Zealand—</i> (a) Conjointly by Union S.S. Co. and Huddart, Parker Proprietary	Weekly	Sydney, Melbourne, Hobart, Bluff, Dunedin, Christchurch and Wellington	Poundage rates.
(b) Conjointly by Shaw, Savill and Albion Co. & N.Z. Shipping Co.	Fortnightly	Hobart, Bluff, Dunedin, and Wellington	" "
(c) Other Steamers ...	Irregularly, when convenient	Sydney, Wellington, Auckland, and Lyttelton	" "
4. <i>To and from ports in N.S. Wales—</i> (i.) NORTHERN PORTS— (a) North Coast S.N. Co.	Twice weekly	Sydney, Manning River, Port Macquarie, Macleay, Nambucca, Belling River, Coffs Harbour, Clarence River, Byron Bay, and Richmond River	Poundage rates.
(b) Cain's Co-Operative S.S. Co....	Weekly	Sydney & Port Macquarie	" "
(ii.) SOUTH COAST PORTS— Illawarra and S. Coast S.N. Co....	Twice weekly	Sydney, Eden, Bega and Tathra	" "

\* Mails carried also to India *via* Colombo. † Carries also mails to Canada and the United States.



## SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
<b>5. To and from Northern Ports of Qld.—</b>			
(a) Australian United Steam Navigation Co.	Weekly	Brisbane, Gladstone, Townsville, Cairns, Mourilyan, Innisfail, Pt. Douglas & Cook's	Subsidised by agreement dated 29th Nov., 1906, for five years, and one year's extension. Amount of subsidy, £18,450.
(b) Do. do. do.	Once every three weeks	Brisbane, Normanton & Burketown, via Townsville, Cooktown, and Thursday Island	Subsidised by agreement dated 16th Jan., 1906, for five years, extended for two years to Jan., 1913. Amount of subsidy, £6000. Subsidies under 5 (a) and (b) paid by Queensland.
(c) Other steamers ...	Irregularly, when convenient	Various...	Poundage rates
<b>6. To and from Ports in S. Australia—</b>			
<b>(i.) NORTHERN TERRITORY—</b>			
(a) The Eastern and Ausn., and the China Navigation Co.'s	Irregularly	To and from Adelaide, Melbourne, and Sydney, via North Queensland ports, extending to China and Japan	Postal Union Rates.
(b) Burns, Philp and Co.	Monthly		
(c) Nippon Yusen Kaisha	Irregularly		
(d) Jolly and Co.	Four times a year	Port Darwin and Boroloola, calling half-yearly at Roper River	Subsidised by agreement till 30th June, 1912. Amount of subsidy, (d) £385; (e) £150 per voyage.
(e) " " "	Every eight weeks	Pt. Darwin & Wyndham	
<b>(ii.) To SOUTH COAST PORTS—</b>			
(a) Gulf Steamship Co. ...	Weekly	Pt. Adelaide & Kingscote	Subsidised to 31st December, 1913. Amount of subsidy, (a) £595; (b) £299; (c) £293; (d) £149. Subsidised for three years from 1st January, 1911. Amount of subsidy, £1730. Subsidised without agreement. Amount of subsidy, £36. Subsidies under 6 (i.) (d), (e), and (ii.) (a), (b), (c), (d), (e), (f), paid by South Aust.
(b) " " "	Twice a wk.	" Edithburgh	
(c) " " "	"	" Stansbury	
(d) " " "	Weekly	" Pt. Vincent	
(e) Adelaide Steamship Co.	"	" Pt. Lincoln	
(f) Adelaide Steam Tug Co.	As required	Port Pirie & Hummocks Hill	
<b>7. Western Australia—</b>			
<b>(i.) INTERSTATE—</b>			
(a) By P. & O. and Orient Lines	Weekly	Fremantle and Adelaide	P. and O. at Postal Union rates. Orient line subsidised. See above 1 (a) and (b). Poundage rates.
(b) Adelaide Steamship, the Australian United S. Navigation, Huddart Parker, Howard Smith, Melb. S.S. Co., and McIlwraith McEachern lines	Conjointly, weekly	Fremantle, Albany, and Adelaide	
(c) Messageries Maritimes, Norddeutscher Lloyd, and the German and Ausn. lines	Every four weeks	Fremantle and Adelaide	Postal Union rates by first two, and poundage rates by last line.
(d) White Star line	Monthly	Albany and Adelaide	Poundage rates.
<b>(ii.) To &amp; FROM PORTS ON N.W. COAST</b>			
(a) Adelaide Steamship Co.	"	Fremantle and Derby	Subsidised by agreement dated 28th February, 1910, for three years. Amount of subsidy, £700. Subsidy paid by Western Australia.
(b) " " "	Once each sixty days	Fremantle & Wyndham	
(c) West Aust. & Ocean S. Co.'s	Fortnightly	Fremantle and Broome	Poundage rates.
(d) Ausn. United S. Navigation and Adelaide S. Co.'s	Irregularly during the cattle season	Fremantle, Derby, and Wyndham	" "
<b>(iii.) To AND FROM PORTS ON S. COAST</b>			
(a) Adelaide Steamship Co.	Weekly	Albany and Esperance	Subsidised by agreement dated 1st February, 1909, for three years. Amount of subsidy, £4000. W.A. Govt. pays £750; Cwth. Govt. £3250.
(b) " " "	Fortnightly	Albany & Israelite Bay	
(c) " " "	Quarterly	Albany and Eucla	

## SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
<b>8. Tasmania—</b>			
(a) Union S. Co. and Huddart, Parker Proprietary	3 times a week	Melb'rne & Launceston	Subsidised by agreement dated 1st October, 1909, for three years. Amount of subsidy, £13,000, payable by all States on a <i>per capita</i> basis. Poundage rates.
(b) Do. do. do. ...	Twice a wk.	" Burnie	
(c) Do. do. do. ...	Weekly	Sydney, Hobart, and Wellington	
(d) Union Steamship Co. ...	Fortnightly	Sydney, Eden, Launceston, and Devonport	" "
(e) New Zealand mail services, see above New Zealand, 3 (a) & (b).	Twice a wk.	Sydney, Melb'ne, Hobart, Bluff, Dunedin, Christchurch, Wellington and Auckland	" "
(f) To and from ports in Western districts	Weekly	Hobart and Strahan	" "
(g) Ellerker and Co. ...	"	Melbourne, Burnie, etc.	"
(h) Huon Channel and Peninsula Steamship Co. Ltd....	Twice a wk.	Hobart and Tasman Peninsula Ports	Subsidised by agreement dated 1st January, 1910, for three years. Amount of subsidy £160 per annum.
(i) Holyman and Sons Ltd. ...	"	Hobart & Maria Island	Subsidised by agreement dated 1st January, 1910, for three years. Amount of subsidy £25 per annum
(j) " " ...	Once every three wks.	Launceston and Furneaux group of Islands	Subsidised by agreement dated 1st January, 1911, for two years. Amount of subsidy £375 per annum, £200 paid by Tasmanian Government and £175 by Commonwealth Government.
(k) Stephenson & Gunn ...	"	Launceston and King Island	Subsidised by agreement dated 1st January, 1910, for three years. Amount of subsidy £200 per annum.
<b>9. To Eastern Ports—</b>			
(a) A. Currie and Co. ...	Once every five weeks	*Melbourne, Sourabaya, Samarang, Batavia, & Singapore	Subsidised by Victorian Government for trade purposes at £2000 a year for three years from December, 1907. Mails at poundage rates.
(b) Burns, Philp & Co. ...	Monthly	Sydney, do., do.	Subsidised by N.S.W. Govt. Mails at poundage rates. Poundage rates.
(c) China Navigation, Eastern & Ausn., and Burns, Philp Co.'s	About three times a month	Sydney, to Hong Kong, Manila, etc., <i>via</i> North Queensland ports	Postal Union rates.
(d) Norddeutscher Lloyd	Monthly	<i>Via</i> Germ'n New Guinea, Bismarck Archipelago, and Singapore	
(e) Nippon Yusen Kaisha ...	"	Sydney to Manilla, China, and Japan, <i>via</i> N Queensland ports	" "
(f) Various other steamers ...	About monthly	Sydney or Newcastle and ports in Borneo, Java, Sumatra, and Malay Peninsula	Poundage rates.
(g) W.A.S.N. Co. & Ocean S.S. Co.	Fortnightly	W.A. Ports, Java, and Singapore	" "
<b>10. South Africa—</b>			
White Star, Lund's, Currie's, and other Companies	Irregularly	Various	" "
<b>11. North America—</b>			
(a) Weir line ...	"	Sydney, San Francisco, and Vancouver	Poundage rates.
(b) Various steamers ...	"	Sydney or Newcastle to San Francisco	" "
(c) Various steamers ...	"	Sydney to Guaymas (Mexico)	" "
(d) Union S.S. Co. ...	13 voyages yearly.	Syd., Wellington, Tahiti and San Francisco	Postal Union rates.
(e) Canadian-Australian Line ...	Every four weeks	Sydney, Auckland, Fiji and Vancouver	Poundage rates.

\* Calling also irregularly at Sydney or Adelaide.

## SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
12. <i>South America</i> — Various steamers ...	About weekly	Sydney or Newcastle to ports in Chile, Brazil, Peru and Uruguay	Poundage rates.
13. <i>Pacific Islands</i> — (a) Burns, Philp and Co. ...	Monthly	Sydney to Lord Howe & Norfolk Islands, N. Hebrides	Subsidised by Commonwealth at £12,000 per annum.
(b) " " ...	Every two months	Sydney to Gilbert and Marshall Islands	
(c) " " ...	Fortnightly	Papua	
(d) " " ...	Every six weeks	Solomon Islands	
(e) German S.S. Co. ...	Every 4 mth	...	Subsidised by German Gov.
14. <i>Noumea</i> — (a) Messageries Maritimes ...	Fortnightly	Sydney and Noumea and to Vila (New Hebrides) once a month	Postal Union rates.
(b) Other steamers ...	About fortnightly	Sydney and Noumea	Poundage rates.
15. <i>Fiji</i> — (a) Union S.S. Co. ...	Monthly	Sydney and Suva	" "
(b) S.S. <i>Providence</i> & ...	Every six weeks	Sydney & Suva, Futuna, Rotumah & Wallis Is.	" "
(c) Union S.S. Co. ...	Monthly	Sydney, Auckland, Suva, Tonga, and Samoa	" "
16. <i>Fiji and Noumea</i> — Burns, Philp and Co. ...	"	Sydney and Suva	" "
17. <i>Ocean and Pleasant Islands</i> — Various steamships ...	"	Sydney, Ocean and Pleasant Islands	" "

10. **Amount of Mail Subsidies Paid, 1910.**—The mail subsidies are paid by the Commonwealth Postal Department, but are debited to the several States. The following table shows the amounts of subsidies for ocean and coastal mail services as existing on 31st December, 1910:—

## MAIL SUBSIDIES.—OCEAN AND COASTAL SERVICES, 1910.

Service ...	Orient Pacific.	Vancouver Service.	Qu'ensland Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
	£	£	£	£	£	£
Annual Subsidy ...	170,000	26,627	24,450	5,590	9,000	13,885

The following table shows the amount debited to each State in respect of each ocean mail subsidy during the year ended 30th June, 1910:—

## MAIL SUBSIDIES.—AMOUNT PAID BY EACH STATE IN RESPECT OF EACH OCEAN MAIL SUBSIDY, 1909-10.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
Commonwealth subsidies—							
Orient-Pacific ...	52,593	42,269	18,573	13,493	8,871	6,060	141,859
Vancouver Service ...	9,907	7,919	3,447	2,536	1,664	1,154	26,627

During the year 1910 the amount paid by the Commonwealth for conveyance of mails at poundage rates by non-contract vessels was £22,704; by road services, £306,193; and by railway services, £303,350.

11. **Average and Fastest Time of Mails to and from London.**—Great progress has been made in regard to the means of postal communication with the United Kingdom and the continents of Europe and America. In 1857 there was an unsatisfactory ocean mail service, which nominally brought monthly mails, with news nearly sixty days old; at the present time, though but fifty years have elapsed, there are four lines of modern ocean steamships, which bring the mails in about twenty-nine days to Adelaide, in addition to services by way of New Zealand, *via* San Francisco and Vancouver. After leaving Fremantle, where the Western Australian mails are landed, the outward mail steamers *via* the Suez Canal all call at Adelaide, where the remaining mails are landed and conveyed to their ultimate destination by rail. The subjoined table shews the average and the fastest times occupied in the conveyance of mails from London to Adelaide and *vice versa* during the year 1910:—

**AVERAGE AND FASTEST TIME OCCUPIED IN CONVEYANCE OF MAILS VIA SUEZ CANAL BETWEEN LONDON AND ADELAIDE, AND VICE VERSA, DURING 1910.**

Service.	London to Adelaide.				Adelaide to London.			
	Average Time.		Fastest Time.		Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.	Days.	Hours.	Days.	Hours.
Peninsular and Oriental S.N. Co., <i>via</i> Brindisi and Colombo ...	28	12	27	11	29	8	28	16
Orient Pacific S. N. Co., <i>via</i> Naples and Suez ...	28	9	28	2	30	14	29	12
*Messageries Maritimes, <i>via</i> Mar- seilles ...	...	...	...	...	33	19	30	20
*Norddeutscher Lloyd, <i>via</i> Genoa	...	...	...	...	32	1	30	14

\* No mails were received from London by the Messageries Maritimes or by the Norddeutscher Lloyd services.

The journey by rail from Adelaide, where the mails for the eastern States are landed, to Melbourne takes 17½ hours; from Adelaide to Sydney, 42 hours, including a stop of about seven hours at Melbourne; while the through journey from Adelaide to Brisbane takes just over three days. The journey from Melbourne to Hobart occupies about 29 hours, *via* Launceston, and about 32 hours direct.

The subjoined table shews the average and the fastest times occupied in the conveyance of mails between Sydney and London and *vice versa* by the mail routes *via* Vancouver during the year 1910:—

**AVERAGE AND FASTEST TIMES OCCUPIED IN CONVEYANCE OF MAILS VIA VANCOUVER BETWEEN LONDON AND SYDNEY, AND VICE VERSA, DURING 1910.**

Service.	London to Sydney.		Sydney to London.	
	Average Time.	Fastest Time.	Average Time.	Fastest Time.
	Days.	Days.	Days.	Days.
Canadian-Australian Line, <i>via</i> Vancouver ...	37½	37	35½	34

12. **Money Orders and Postal Notes.**—The issue of money orders and postal notes in the Commonwealth is regulated by sections 74 to 79 of the Post and Telegraph Act

1901. A money order, which may be issued for payment either within the Commonwealth or abroad, may not be granted for a larger sum than £20, nor a postal note, which is payable only within the Commonwealth, for a larger sum than twenty shillings. Money orders are sent direct from the Commonwealth to the United Kingdom, and to most of the British colonies and possessions; to the German Empire and German colonies; to Italy; and to the United States of America. Money orders, payable in Japan and China, are sent *via* Hong Kong; orders payable in all other countries are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less threepence for every £5, or part thereof. In order that the full amount of the original order may be forwarded to the payee, this extra commission must be paid by the remitter.

(i.) *Value of Orders Issued and Paid and of Notes Sold, 1910.*—The following table shews the total value of money orders issued and paid, and of postal notes sold in each State and in the Commonwealth during the year 1910, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department:—

**VALUE OF MONEY ORDERS ISSUED AND PAID AND OF POSTAL NOTES SOLD, TOGETHER WITH THE TOTAL AMOUNTS OF COMMISSION AND POUNDAGE RECEIVED IN EACH STATE DURING 1910.**

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ...	2,806,025	2,879,390	21,182	1,092,136	21,309
Victoria ...	1,101,609	1,418,857	9,279	878,426	17,191
Queensland ...	856,171	698,726	8,925	288,467	5,592
South Australia ...	347,485	335,138	3,536	187,756	3,781
Western Australia ...	997,616	708,623	8,237	232,328	4,148
Tasmania ...	258,817	217,944	2,606	115,238	2,264
Commonwealth ...	6,367,723	6,258,678	53,765	2,794,351	54,285

(ii.) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows:—

**RATES OF COMMISSION, MONEY ORDERS, 1911.**

If Payable in—	For sums—								
	Not exceeding £2.	Exceeding £2, but not exceeding £5.	Exceeding £5, but not exceeding £7.	Exceeding £7, but not exceeding £10.	Exceeding £10, but not exceeding £12.	Exceeding £12, but not exceeding £15.	Exceeding £15, but not exceeding £17.	Exceeding £17, but not exceeding £20.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
The Commonwealth...	0 6	0 6	1 0	1 0	1 6	1 6	2 0	2 0	
New Zealand and Fiji ...	0 6	1 0	1 6	2 0	2 6	3 0	3 6	4 0	
Papua ...	0 9	0 9	1 6	1 6	2 3	2 3	3 0	3 0	
U. Kingdom & other countries	Sixpence for each £1 or fraction of £1								

Remittances may also be made by telegraph to and from money order offices in the Commonwealth which are also telegraph or telephone offices, and to New Zealand. The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. The remitter must also send a telegram to the payee

advising the transmission of the money, which telegram must be produced by the payee when applying for payment.

(iii.) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. Broken amounts not exceeding fivepence (but not fractions of a penny) may be added by affixing postage stamps. The poundage or commission charged on notes of different denominations is as follows:—

**POUNDAGE RATES, POSTAL NOTES, 1911.**

Denomination of Note ...	6d. to 1s. 6d.	2s. to 4s. 6d.	5s.	7s. 6d.	10s. to 20s.
Poundage charged ...	$\frac{1}{2}$ d.	1d.	$1\frac{1}{2}$ d.	2d.	3d.

**13. Number and Value of Money Orders and Postal Notes Issued and Paid, 1901 to 1910.**—The following table shews the total number and face value of money orders and postal notes issued and paid in the Commonwealth during each year from 1901 to 1910:—

**NUMBER AND VALUE OF MONEY ORDERS AND POSTAL NOTES ISSUED AND PAID, 1901 to 1910.**

Year.	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1901 ...	1,318	4,193	1,339	4,081	3,515	1,292	3,522	1,293
1902 ...	1,283	4,293	1,252	4,164	3,599	1,332	3,590	1,334
1903 ...	1,261	4,346	1,244	4,342	4,012	1,512	4,003	1,514
1904 ...	1,289	4,497	1,266	4,469	4,527	1,715	4,538	1,715
1905 ...	1,312	4,771	1,286	4,760	4,993	1,889	4,993	1,889
1906 ...	1,329	5,059	1,318	5,033	5,480	2,079	5,482	2,079
1907 ...	1,387	5,533	1,374	5,508	6,057	2,274	6,057	2,274
1908 ...	1,437	5,733	1,402	5,725	6,319	2,391	6,322	2,389
1909 ...	1,460	6,093	1,426	6,041	6,872	2,598	6,867	2,595
1910 ...	1,500	6,368	1,425	6,259	7,443	2,794	7,443	2,794

**14. Classification of Money Orders Issued and Paid, 1910.**—The following table shews the number and value of money orders issued in each State during the year 1910 and classified according to the country where payable:—

**MONEY ORDERS ISSUED IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY WHERE PAYABLE, 1910.**

State in which Issued.	Where Payable.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales	534,411	9,700	56,370	10,872	611,353
Victoria ...	216,708	5,874	31,141	9,202	262,925
Queensland ...	194,559	1,938	25,520	6,364	228,381
South Australia ...	77,563	1,096	12,997	3,843	95,499
Western Australia	192,957	1,244	22,876	3,984	221,061
Tasmania ...	72,484	1,970	5,276	1,060	80,790
Commonwealth	1,288,682	21,822	154,180	35,325	1,500,009

## MONEY ORDERS ISSUED IN EACH STATE, Etc.—(Continued).

State in which Issued.	Where Payable.				Total.
	In the Commonwealth.	In New Zealand.	In the United Kingdom.	In Other Countries.	
VALUE.					
	£	£	£	£	£
New South Wales	2,616,077	29,119	121,440	39,389	2,806,025
Victoria ...	992,711	18,377	62,365	28,156	1,101,609
Queensland ...	755,627	6,588	58,537	35,419	856,171
South Australia ...	306,112	3,696	25,267	12,410	347,485
Western Australia	902,588	5,791	54,862	34,375	997,616
Tasmania ...	240,292	7,202	9,146	2,177	258,817
Commonwealth	5,813,407	70,773	331,617	151,926	6,367,723

The following table shews the number and value of money orders paid in each State during the year 1910, and classified according to the country where issued :—

## MONEY ORDERS PAID IN EACH STATE, CLASSIFIED ACCORDING TO THE COUNTRY OF ISSUE, 1910.

State in which paid.	Where Issued.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales	534,290	36,345	17,372	12,320	600,327
Victoria ...	286,551	24,376	11,926	9,669	332,522
Queensland ...	171,466	2,737	6,079	2,533	182,815
South Australia ...	77,987	1,747	3,090	1,534	84,358
Western Australia	149,375	1,867	4,749	1,134	157,125
Tasmania ...	58,115	6,078	2,000	1,442	67,635
Commonwealth	1,277,784	73,150	45,216	28,632	1,424,782
VALUE.					
New South Wales	£ 2,676,936	£ 92,977	£ 55,936	£ 53,541	£ 2,879,390
Victoria...	1,282,144	61,809	37,597	37,307	1,418,857
Queensland ...	656,570	9,834	20,657	11,665	698,726
South Australia ...	314,293	5,526	9,235	6,084	335,138
Western Australia	682,234	4,960	16,693	4,736	708,623
Tasmania ...	195,674	13,166	4,813	4,291	217,944
Commonwealth	5,807,851	188,272	144,931	117,624	6,258,678

In the above tables money orders payable or issued in foreign countries, which have been sent from or to the Commonwealth through the General Post Office at London, are included in those payable or issued in the United Kingdom.

15. **Classification of Postal Notes Paid, 1910.**—The subjoined table shews the number and value of postal notes paid during the year 1910 in each State and in the Commonwealth, classified according to the State in which they were issued.

Particulars regarding the total number and value of postal notes issued and paid during previous years since the inauguration of the Commonwealth have already been given in paragraph 13 hereof.

**NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO  
STATE OF ISSUE, 1910.**

State in which Paid.	Postal Notes Issued in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER.							
New South Wales	2,409,663	109,569	126,886	39,218	25,292	21,066	2,731,694
Victoria ...	163,128	1,972,648	33,749	55,448	44,038	52,881	2,321,942
Queensland ...	42,430	8,506	562,934	2,189	1,817	896	618,772
South Australia ...	32,563	22,327	2,040	389,824	13,845	1,141	461,740
Western Australia	6,067	10,159	1,065	5,435	405,079	721	428,526
Tasmania ...	303,007	271,195	26,267	38,212	6,492	234,931	880,104
Commonwealth	2,956,858	2,394,404	752,941	530,326	496,613	311,636	7,442,778

VALUE.							
	£	£	£	£	£	£	£
New South Wales	910,136	45,725	49,872	14,211	11,822	7,674	1,039,440
Victoria ...	69,967	739,754	13,263	22,026	24,460	22,018	891,488
Queensland ...	18,008	3,904	214,283	953	959	419	238,526
South Australia ...	16,159	9,831	1,004	136,056	8,141	506	171,697
Western Australia	2,635	5,022	554	2,704	184,058	240	195,213
Tasmania ...	75,230	74,192	9,491	11,805	2,885	84,380	257,988
Commonwealth	1,092,135	878,428	288,467	187,755	232,325	115,237	2,794,347

The following statement shews the number of postal notes of each denomination paid in the Commonwealth during the year 1910:—

**NUMBER OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO DENOMINATION,  
1910.**

Denomination.	Number Paid.	Denomination.	Number Paid.	Denomination.	Number Paid.
s. d.		s. d.		s. d.	
0 6	82,394	3 6	378,599	10 6	190,661
1 0	351,415	4 0	619,245	15 0	449,942
1 6	250,223	4 6	466,335	20 0	1,008,508
2 0	402,746	5 0	874,728		
2 6	520,060	7 6	373,664		
3 0	587,129	10 0	887,129	Total ...	7,442,778



**16. The Value Payable Post.**—This is a system under which the Postal Department undertakes to deliver registered articles sent by parcel post within the Commonwealth, and to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of twopence on sums not exceeding ten shillings, and one penny for each additional five shillings or part thereof, must be prepaid by postage stamps affixed to the articles distinct from the postage and marked "commission." The registration fee (threepence) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. Any article that can be sent by parcel post may be transmitted as a value-payable parcel. Letters may also be sent as value-payable parcels, if prepaid at the letter rate of postage and handed to the parcels clerk in the same manner as in the case of parcels. The subjoined statement gives particulars of the number and value of parcels sent through the Value Payable Post in each State during the years 1907 to 1910. From these figures it will be seen that the business in Queensland is greatly in excess of the combined transactions of all the other States, owing to the fact that the system has been established in that State for some years, but was only extended to the whole Commonwealth with the advent of Federal control of the post office.

**VALUE PAYABLE PARCELS POST.—NUMBER POSTED, VALUE COLLECTED, AND  
REVENUE, 1907 to 1910.**

	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
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**NUMBER OF PARCELS POSTED.**

	No.	No.	No.	No.	No.	No.	No.
1907	4,814	617	27,729	42	9,236	72	42,510
1908	6,400	856	26,865	125	13,093	62	47,401
1909	7,585	1,051	31,765	149	19,250	42	59,842
1910	7,901	894	34,917	214	21,940	110	65,976

**VALUE COLLECTED.**

	£	£	£	£	£	£	£
1907	7,763	1,075	36,876	76	15,782	83	61,655
1908	11,755	1,342	36,924	236	21,331	132	71,720
1909	10,926	1,697	39,351	234	30,712	93	83,013
1910	14,736	1,656	43,478	288	34,697	344	95,199

**REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND  
MONEY ORDER COMMISSION.**

	£	£	£	£	£	£	£
1907	702	96	3,954	5	1,333	7	6,097
1908	985	135	3,713	18	1,869	9	6,729
1909	937	164	4,112	22	2,603	6	7,844
1910	1,201	162	4,634	19	3,178	18	9,212

17. **Transactions of the Dead Letter Office, 1910.**—Under sections 45 to 53 of the Post and Telegraph Act 1901 the Postmaster-General may cause all unclaimed and undelivered postal articles originally posted within the Commonwealth which have been returned from the place to which they were forwarded to be treated as unclaimed articles and opened. Every unclaimed letter and postal article must be kept for the prescribed period at the office to which it has been transmitted for delivery, and must then be sent to the General Post Office. Letters and packets originally posted elsewhere than in the Commonwealth are returned to the proper authorities in the country in which they were so posted, or, if originally posted in another State, are returned to the General Post Office of that State; but unclaimed or undelivered newspapers may be forthwith sold, destroyed, or used for any public purpose. Opened postal articles not containing anything of value are returned to the writer or sender if his name and address can be ascertained, but may otherwise be destroyed forthwith. As regards opened letters and packets containing valuable or saleable enclosures, a list and memorandum of the contents are kept, and a notice is sent to the person to whom the letter or packet is addressed if he be known, or otherwise to the writer or sender thereof if he be known. Upon application within three months of the date of such notice the letter or packet may be claimed by the addressee, or, failing him, by the writer or sender. If unclaimed within three months, the letter and contents may be destroyed or sold, and the proceeds paid into the consolidated revenue fund. The following table shows the total number of letters, postcards, and packets dealt with by the Dead Letter Offices in the Commonwealth during the year 1910, together with the number of inland, interstate, and international letters either returned to writers, delivered, etc., destroyed, or returned as unclaimed:—

#### TRANSACTIONS OF DEAD LETTER OFFICES IN THE COMMONWEALTH, 1910.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wth.
LETTERS (,000 OMITTED).							
Returned to writers, delivered, etc. ...	325	290	119	30	67	40	871
Destroyed in accordance with Act ...	65	70	14	9	8	4	170
Returned to other States or Countries as unclaimed ...	51	36	25	14	20	14	160
Total ...	441	396	158	53	95	58	1,201
POSTCARDS (,000 OMITTED).							
Returned to writers, delivered, etc. ...	8	6	28	10	21	2	75
Destroyed in accordance with Act ...	44	10	6	8	3	3	74
Returned to other States or Countries as unclaimed ...	5	6	3	2	3	1	20
Total ...	57	22	37	20	27	6	169
PACKETS (,000 OMITTED).							
Returned to writers, delivered, etc. ...	885	68	87	39	48	9	1,136
Destroyed in accordance with Act ...	42	175	19	27	6	...	269
Returned to other States or Countries as unclaimed ...	4	57	29	15	29	11	145
Total ...	931	300	135	81	83	20	1,550
Grand Total (letters, postcards, & packets)	1,429	718	330	154	205	84	2,920

18. **Post Offices and Receiving Offices and Employees, 1901 to 1910.**—The following tables show, as far as returns are available, the numbers of post and receiving offices and the corresponding numbers of employees in each State and in the Commonwealth at the end of the year 1901, and from 1906 to 1910 inclusive :—

**NUMBER OF POST OFFICES AND RECEIVING OFFICES, 1901 to 1910.**

State.	1901.		1906.		1907.		1908.		1909.		1910.	
	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.
New South Wales	1,684	524	1,769	519	1,809	510	1,842	526	1,884	513	1,911	526
Victoria	1,637	18	1,659	657	1,656	670	1,633	713	1,642	728	1,655	765
Queensland*	411	823	468	886	480	909	499	896	522	856	558	822
South Australia	699	...	705	7	704	12	686	29	631	92	648	90
Western Australia	187	28	281	57	298	67	320	72	331	82	343	87
Tasmania†	376	...	373	19	375	31	378	36	377	40	391	38
Commonwealth	4,994	1,393	5,256	2,145	5,322	2,199	5,358	2,272	5,387	2,311	5,506	2,328

\* For the year 1901 the number of receiving offices is included in post offices in the official returns, and separate figures here given are estimated. † The return for 1901 includes both post offices and receiving offices.

**NUMBER OF EMPLOYEES AND NUMBER OF MAIL CONTRACTORS, 1901 to 1910.**

State.	1901.		1906.		1907.		1908.		1909.		1910.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
New South Wales	5,636	984	5,943	1,037	6,964	1,072	7,343	1,305	7,469	1,553	8,622	1,602
Victoria	3,962	890	4,896	919	5,744	758	5,989	776	6,285	804	7,043	848
Queensland*	2,616	—	2,610	630	3,021	640	3,073	550	3,146	589	3,247	720
South Australia†	1,945	—	1,734	255	1,767	261	1,871	237	1,896	259	1,905	268
Western Australia	1,303	140	1,941	152	1,579	208	1,670	206	1,736	234	1,894	233
Tasmania:	865	—	811	164	814	172	843	177	874	186	969	189
Commonwealth	16,327	2,014	17,935	3,157	19,889	3,111	20,789	3,251	21,406	3,625	23,680	3,860

\* Country postmasters and receiving officers included in employees. † Non-official postmasters are included in employees. ‡ The return for 1901 includes all persons in the pay of the Postal Department.

At the end of the year 1910, out of the total number of persons, 27,540, employed in the Postmaster-General's Department, 16,614 were employed wholly, and 10,926 were employed partially in the service.

19. **Postal Routes, 1910.**—The following table shows the length of postal routes and the number of miles travelled by mail conveyances during the year 1910 :—

## POSTAL ROUTES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
MILES OF ROUTE.							
Railway ...	3,668	3,342	4,182	2,198	2,145	631	16,166
Water ...	4,438	52	2,267	9,179	2,951	881	19,768
Other ...	35,937	11,529	28,915	8,596	9,402	1,957	96,336
Total... ..	44,043	14,923	35,364	19,973	14,498	3,469	132,270
MILES TRAVELLED BY MAIL CONVEYANCES (,000 omitted.)							
Railway ...	5,445	4,320	3,879	1,775	1,420	812	17,651
Water ...	689	21	180	297	155	207	1,549
Other ...	8,931	3,767	4,924	1,600	876	878	20,976
Total ... ..	15,065	8,108	8,983	3,672	2,451	1,897	40,176

20. **Gross Revenue of Postal Department, 1901 to 1910.**—The following table shews the gross revenue of the Postal Department for the years ended 30th June, 1901 to 1910 inclusive, under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources.

## GROSS REVENUE OF POSTAL DEPARTMENT, 1901 to 1910.

Year ended 30th June.	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1901* ... ..	516,181	224,484†	+	740,665
1902 ... ..	1,743,661	629,200†	+	2,372,861
1903 ... ..	2,045,925	358,805†	+	2,404,730
1904 ... ..	1,724,919	498,937	286,327	2,510,203
1905 ... ..	1,795,177	525,054	312,320	2,632,551
1906 ... ..	1,906,712	565,422	352,214	2,824,348
1907 ... ..	2,125,365	614,983	388,226	3,128,574
1908 ... ..	2,239,874	649,481	410,741	3,300,096
1909 ... ..	2,325,326	642,548	441,551	3,409,425
1910 ... ..	2,541,080	681,038	509,623	3,731,741

\* Period from 1st March to 30th June, 1901. † Including telephone revenue. + Included in telegraph revenue.

The following table gives an analysis of the gross earnings of the Postal Department in each State and in the Commonwealth during the year ended 30th June, 1910:—

## ANALYSIS OF GROSS REVENUE OF POSTAL DEPARTMENT, 1909-10.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
	£	£	£	£	£	£	£
Postage ... ..	905,601	570,230	314,827	207,360	153,965	101,518	2,253,501
Telegraphs ... ..	223,028	146,667	112,424	102,753	76,584	19,582	681,038
Telephones ... ..	202,566	150,550	62,225	40,877	35,859	17,546	509,623
Money order commission	21,161	9,791	7,565	3,303	7,844	2,445	52,409
Poundage on postal notes	20,371	16,490	5,381	3,620	4,022	2,264	52,048
Private boxes and bags	7,851	3,399	3,697	1,464	1,816	850	19,077
Miscellaneous ... ..	57,169	40,693	25,274	21,637	13,590	5,682	164,045
Total ... ..	1,437,747	937,820	531,593	381,014	293,680	149,887	3,731,741

21. **Expenditure in respect of the Postal Departments, 1901 to 1910.**—The sub-joined table shows the total expenditure in respect of the Postal Department in the Commonwealth for each of the years ended 30th June, 1903 to 1910 inclusive. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, and new buildings and additions, which are under the control of the Department of Home Affairs.

**TOTAL EXPENDITURE IN RESPECT OF POSTAL DEPARTMENT, 1902-3 to 1909-10.**

Year.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
Expenditure ... £	2,568,846	2,697,454	2,600,665	2,784,665	2,966,099	3,345,841	3,611,678	3,786,756

The following table shows the distribution of expenditure on various items in each State during the year ended 30th June, 1910 :—

**DISTRIBUTION OF EXPENDITURE OF POSTAL DEPARTMENTS, 1909-10.**

Particulars.	Central Office.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
	£	£	£	£	£	£	£	£
Salaries and Contingencies—								
Salaries ...	10,142	573,498	415,440	192,446	148,957	168,200	55,084	1,563,767
Conveyance of mails ...		242,296	120,693	150,042	59,018	63,737	27,389	663,175
Contingencies ...	2,182	243,775	179,139	119,503	53,377	71,477	31,063	700,516
Cables ...		8,769	6,769	8,769				24,307
Ocean mails ...		52,593	42,269	18,573	13,493	8,871	6,060	141,859
Vancouver mails ...		9,907	7,919	3,447	2,536	1,664	1,154	26,627
Miscellaneous ...	1,026	478	27	1,493	9	357	66	3,456
Pensions & Retiring Allowances ...		15,759	12,592	1,360		2,372		32,083
Rent, Repairs, Maintenance ...	668	21,549	14,323	8,179	3,493	4,951	1,322	54,485
Supervision of Works ...		697	313	559	297	767	170	2,803
Proportion of Audit Office exps. ...		685	456	377	334	310	236	2,398
Unforeseen expenditure ...		17	5	51	20	4		97
New Works—								
Telegraph and Telephone New Buildings, etc. ...		134,556	169,535	49,547	56,147	36,460	19,511	465,756
Other Expenditure exc'd Central Office expenditure charged to all States on a population basis ...		35,726	24,194	13,313	7,293	7,897	1,378	89,801
		5,793	4,657	2,045	1,486	978	667	15,626
<b>Total ...</b>	<b>14,018</b>	<b>1,346,098</b>	<b>998,331</b>	<b>569,704</b>	<b>346,460</b>	<b>368,045</b>	<b>144,100</b>	<b>3,786,756</b>

22. **Royal Commission on Postal Services.**—On 22nd June, 1908, a Royal Commission was appointed to report upon the Postal, Telegraphic, and Telephonic Services of the Commonwealth, and more particularly in relation to the following matters :—(a) Management; (b) Finance; (c) Organisation, including discipline; (d) Extensions in country districts, and particularly in remote or sparsely-populated parts of the Commonwealth; and (e) Complaints in relation to the services. The inquiry was commenced in July, 1908, and occupied 228 sittings. The Commissioners visited every State and took evidence at each State capital and also at Fremantle, Kalgoorlie, and Launceston. In addition, personal visits of inspection were made to all the General Post Office buildings and many branch telephone exchanges and suburban post-offices of Sydney and Melbourne. The number of witnesses examined by the Commissioners was 190, including representatives of public and commercial institutions, experts, and prominent members of the Commonwealth Public Service. Recommendations numbering 175, were made by the Commission in a report laid before Parliament on 30th September, 1910. These refer to a great variety of subjects and matters, but owing to exigencies of space particulars in regard thereto cannot be given in this publication.

## § 2. Telegraphs.

1. **First Lines Constructed.**—The electric telegraph was first introduced into Australia for use by the public in the year 1854, when a line from Melbourne to Williamstown was opened. The first line in South Australia, from Adelaide to Port Adelaide, was opened in 1856, while the first line in New South Wales was brought into operation in 1858, when the line from Sydney to Liverpool, twenty-two miles in length, was opened. In Tasmania the first telegraphic line was completed in 1857, while in the following year communication was established between Sydney, Melbourne, and Adelaide. The first line to be constructed in Queensland was that between Brisbane and Rockhampton, a distance of 396 miles, which was opened in 1864. In Western Australia the first telegraph constructed was from Perth to Fremantle, a distance of twelve miles, which was brought into use in 1869, and in the same year the cable joining Tasmania with the continent of Australia was completed.

2. **Development of Services.**—During the period from 1871 to 1881 great progress was made throughout Australia in the way of telegraphic construction, over 14,000 miles of line, exclusive of railway telegraph lines, being opened for use during the period mentioned, making the total length of the line open at the end of the year 1881, 25,470 miles. In the case of South Australia this increase was to a large extent due to the construction of the transcontinental lines (*a*) from Adelaide to Port Darwin (a distance of 2230 miles), which was completed on the 22nd August, 1872, at a cost of nearly half a million sterling, and (*b*) from Port Augusta to Port Lincoln, and thence along the coast of the Great Australian Bight as far as Eucla, on the Western Australian border. In Queensland there was a large increase resulting from the construction of the line to Normanton, on the Gulf of Carpentaria, while in Western Australia the line from Perth to Albany was extended as far as Eucla on the 9th December, 1877, thus establishing telegraphic communication between the six capital towns, Brisbane, Sydney, Melbourne, Adelaide, Perth, and Hobart. At the present time the systems of telegraph lines throughout Australia are well developed. The longest line extends from Thursday Island, in Torres Straits, by submarine cable to Paterson, on the mainland of Cape York Peninsula; from Paterson the line runs in a southerly direction as far as Brisbane, where it joins the main interstate line to Sydney, Melbourne, and Adelaide; from Adelaide it runs to Port Augusta, then on to Port Lincoln, on Eyre's Peninsula, and thence to Eucla, on the Western Australian boundary; from Eucla the line extends along the coast of the Great Australian Bight to Albany, and thence it runs adjacent to the west coast of Western Australia as far as Onslow, *via* Perth, Geraldton, and Carnarvon. From Onslow connection extends to Broome, in Roebuck Bay, from which place communication is made to Singapore by the Eastern Extension Company's cable. From Roebuck Bay the line crosses the Kimberley district in an easterly direction, and then runs north as far as the terminus at Wyndham. In Queensland a line runs to Burketown, near the coast of the Gulf of Carpentaria, *via* Normanton; another line extends to Cloncurry and Urundangi, in the extreme west of the State. Branch lines extend to all important coastal and inland towns, while considerable networks of lines converge from the country districts towards the centres of population. From Adelaide the transcontinental line, referred to above, runs in a northerly direction to Port Darwin, from which place communication is provided with Europe by submarine cable by way of Batavia, Singapore, and Madras. In Western Australia a line runs from Eucla to the Coolgardie goldfields *via* Balladonia and Dundas, and from Coolgardie communication is provided with Perth and with Sir Samuel, in the East Murchison district.

3. **Number of Telegraph Offices and Length of Lines and Wire Open, 1901 to 1910.**—The following table shews the number of telegraph offices and the length of telegraphic lines and of telegraph wire, exclusive of railway telegraphs, available for use in the Commonwealth at the end of the year 1901, and from 1905 to 1910 inclusive:—

**NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE, AVAILABLE FOR USE, 1901 to 1910.**

Particulars.				1901.	1906.	1907.	1908.	1909.	1910.
No. of Offices	...	No.		2,567	2,955	3,211	3,445	3,597	3,883
Length of Line	...	miles*		41,951	42,575	43,384	43,455	43,849	44,100
„ Wire	...	„ †		101,708	131,939	85,173	90,646	92,909	96,825

\* Including telephone and railway telegraph lines in New South Wales, up to and including 1908, and including railway telegraph lines in South Australia up to and including 1905. † Including telephone and railway telegraph wires in New South Wales up to and including 1906, and including railway telegraph wires in South Australia up to and including 1905.

The following table gives corresponding particulars for each State for the year 1910. The figures are exclusive of railway telegraphs :—

**NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE IN EACH STATE, 1910.**

Particulars.		N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wth.
No. of Offices	No.	1,399	905	607	376	334	262	3,883
Length of Line	miles	14,761	4,057	10,552	5,712	6,905	2,113	44,100
„ Wire	„	32,963	12,042	22,860	14,066	11,319	3,575	96,825

4. **Revenue and Expenditure, 1901 to 1910.**—Particulars as to the revenue from the telegraph systems for the years 1901 to 1910 are given on page 774, while particulars as to the expenditure on telegraph works for the year 1909-10 are given on page 775.

5. **Number of Telegrams Despatched, 1901 to 1910.**—The following table shows the total number of telegrams despatched in the Commonwealth in 1901 and in each of the years 1904 to 1910 inclusive:—

**NUMBER OF TELEGRAMS DESPATCHED (,000 OMITTED), 1901 to 1910.**

Year ...	1901.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Number* ...	8,003	8,688	9,136	10,138	10,893	11,324	11,345	12,238

\* Including interstate cablegrams.

The following table shows the number of telegrams despatched in each State in 1910 for delivery in that State, and the number despatched in each State for delivery in other States, and also the total number of telegrams—exclusive of cablegrams—despatched in each State :—

**NUMBER OF TELEGRAMS DESPATCHED IN EACH STATE, 1910 (,000 OMITTED).**

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Inland (counted once)	3,322	1,943	1,648	883	1,370	260	9,446
Interstate* ...	813	733	413	361	327	145	2,792
Total ...	4,135	2,676	2,061	1,244	1,697	425	12,238

\* Including interstate cablegrams.

**6. Rates for Transmission of Telegrams.**—The present rates for the transmission of telegrams within the Commonwealth were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act charges are made for telegrams according to whether they are "ordinary" or "press" telegrams. "Press" telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorised correspondent, and must be addressed to a registered newspaper or recognised news agency. The subjoined tables shew the scales of charges:—

#### SCALE OF CHARGES FOR ORDINARY TELEGRAMS, 1911.

Particulars.	Town and Suburban, within Prescribed Limits, or within 15 Miles from the Sending Station.	Other Places within the State, except Town and Suburban.	Interstate.
	s. d.	s. d.	s. d.
Including address and signature—			
Not exceeding 16 words ... ..	0 6	0 9	1 0
Each additional word ... ..	0 1	0 1	0 1

Double the foregoing rates are imposed for the transmission of telegrams on Sunday, Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for telegrams sent on "urgent" forms.

#### SCALE OF CHARGES FOR PRESS TELEGRAMS, 1911.

Particulars.	Within any State.	Interstate.	Relating to Parlia- mentary, Executive, Departmental, and other Common- wealth Proceedings as may be prescribed.
	s. d.	s. d.	s. d.
Not exceeding 25 words ... ..	0 6	1 0	...
From 26 to 50 words ... ..	0 9	1 6	...
From 51 to 100 words ... ..	1 6	3 0	...
Every additional 50 words ... ..	0 6	1 0	...
Within the Commonwealth.			
Not exceeding 25 words ... ..	...	...	1 0
From 26 to 100 words ... ..	...	...	1 6
Every additional 50 words ... ..	...	...	0 6

**7. Wireless Telegraphy.**—Under the Wireless Telegraphy Act 1905 the Postmaster-General is given the exclusive privilege of establishing and using stations and appliances for receiving and transmitting messages by wireless telegraphy within Australia. The Postmaster-General is empowered to grant licenses to establish and use stations and appliances for wireless telegraphy, on the fulfilment of the prescribed conditions and payment of the prescribed fees. The Act does not apply to ships belonging to the King's Navy. In December, 1911, the Postmaster-General intimated that he intended to have erected by the Radio-Telegraph branch of the department radio-telegraph stations in or about Melbourne, Sydney, Brisbane, Adelaide, Fremantle, Hobart, Thursday Island,



and Port Moresby, and that these stations would be completed by the end of March, 1912. These stations will form part of a scheme which includes the erection of other stations at intervals round the coast of Australia. The stations are to be of standard type, having a working range of 500 miles by day, and 1500 by night. The rate charged is 10½d. or 11d. per word, allocated as follows:—6d. for land station, ½d. or 1d. for land line, and 4d. for the ship station charge; but a reduction of these rates is being considered.

On the 9th February, 1912, the first official wireless station was declared open at Melbourne by the Governor-General and communication was established with Hobart; whilst, at the time of writing, the station at Sydney is undergoing official trials, Fremantle is nearing completion, and Brisbane and Adelaide are in course of construction.

In December, 1909, a conference of representatives of the Commonwealth, New Zealand, the High Commissioner for the Western Pacific, Fiji, the Admiralty, and the Pacific Cable Board was convened at Melbourne to report upon the establishment of wireless telegraphy in the Pacific. The chief recommendations of this Conference were:—(a) That high-power stations be established at Sydney, Doubtless Bay (New Zealand), Suva (Fiji), and Ocean Island, and (b) that medium-power stations be established at Tulagi (Solomon Islands), and Vila (New Hebrides). The total cost of construction of the scheme covered by these recommendations was £42,000, while the total annual cost was estimated at £13,820 for a continuous service, and £9970 for a restricted service. It was proposed to apportion the cost between Great Britain, New Zealand, Fiji, and Australia. These recommendations were adopted by the Commonwealth Government, but the British Government would not agree to the erection of high-power stations at Suva and Ocean Island. Further consideration, however, was to be given to the scheme for connection between Suva, Vila, Tulagi, and Ocean Island by a series of medium-power stations. In 1911 wireless stations under the control of the Pacific Cable Board were opened at Suva and Wellington. The New Zealand Government have in process of erection two high-power stations at Doubtless Bay and the Bluff, and four low-power stations at Wellington, Gisborne, New Plymouth, and Christchurch.

### § 3. Submarine Cables.

1. **First Cable Communication with the Old World.**—As far back as 1857 the question of connecting Australia with the old world by means of submarine cables was brought forward in South Australia. No steps, however, were taken in the direction of constructing the cable until the year 1869, when various schemes were proposed. About this time the British Australian Telegraph Company was formed for the purpose of laying a cable to Australia without subsidy or guarantee. Communication had already been provided between London and Singapore *via* Bombay and Madras, and also through Java from Batavia to Banjoewangie. The proposal of the above company was to lay cables from Singapore to Batavia, and from Banjoewangie to Port Darwin, from which place connection would be made overland with the Queensland telegraph system at Normanston. It was, however, subsequently decided that the company's line should end at Port Darwin, the South Australian Government undertaking to construct an overland line from Port Augusta to Port Darwin, a distance of 1971 miles. In November, 1871, the submarine cable was completed, and communication was established between Port Darwin and London. On the 22nd August, 1872, the construction of the line from Port Darwin to Adelaide was accomplished at an expenditure of nearly £500,000. The cable from Port Darwin is now under the control of the Eastern Extension Telegraph Company.

2. **The Tasmania-Victoria Cables.**—In the meantime the cable joining Tasmania to the continent of Australia had been laid, and was open for use in 1869, the total length being 170 miles. The line was owned by the Eastern Extension Telegraph Company, and was subsidised by the Tasmanian Government until the year 1909. On the 28th February, 1908, the Postmaster-General entered into an agreement with Messrs. Siemens Brothers and Company Ltd., of London, for the manufacture and laying of two submarine cables between Tasmania and Victoria. The new cables were taken over on the 24th March, 1909, and opened to the public on the 1st May, 1909, the day following the expiration of the agreement with the Eastern Extension Company. Their aggregate length is approximately 350 nautical miles of main cable, and 20 nautical miles each of intermediate and shore end cable, making a total of 390 nautical miles. The contract price was £52,447.

3. **The Eastern Extension Company's Cables.**—In addition to the first Victoria-Tasmania cable and the original cable from Port Darwin referred to above, the Eastern Extension Company has constructed several other cables connecting with various places in the Commonwealth. (a) In 1879 the original cable *via* Banjoewangie was duplicated, the States of New South Wales, Victoria, South Australia, Western Australia and Tasmania having agreed to pay the above company a subsidy of £32,400 per annum for a period of twenty years, the amount to be divided between the States on a population basis. (b) In 1881 a cable was constructed connecting Broome, in Roebuck Bay, W.A., with Banjoewangie; from Broome there is direct telegraphic communication with Perth, from which place communication is made with the Eastern States by the interstate line *via* Albany, Eucla, and Port Augusta. (c) In July, 1899, the company offered to lay a cable direct to Great Britain *via* the Cape of Good Hope, and also offered reductions in the rates charged, if the States would agree to certain conditions giving the company the right of direct dealing with the public. The States of South Australia, Western Australia and Tasmania accepted the terms offered, and New South Wales entered into the agreement in January, 1901. The cable was opened *via* Fremantle and Durban in October, 1901. (d) Another submarine cable from Fremantle to Adelaide forms an alternative line of communication between the eastern States and Western Australia. (e) There is an alternative route, partly belonging to the Eastern Extension Company and connecting the Port Darwin-Singapore cable with London, *via* Hong Kong, Shanghai, Possiet Bay (Pacific Russia), Liban (Russian Baltic), and Newbiggin (England). (f) In 1909 a cable was laid from Java to Cocos Island, thus affording another route from Australia to South Africa, whilst in April, 1911, a powerful wireless station was opened at Cocos Island, thus strengthening the line of communication between Australia and the East.

4. **The Pacific Cable.**—In July, 1898, a conference of representatives of Great Britain, Canada, New South Wales, Victoria, Queensland, South Australia and New Zealand was held for the purpose of considering a project for a cable to be laid across the Pacific Ocean, touching only British territory on its way from Australia to Canada, thus providing an "All Red" route, as it is termed, for a cable system between England and Australia. In the following year it was agreed at a meeting held by representatives of the countries interested that the cable should be laid and that Great Britain and Canada should each pay five-eighteenths of the cost, and the States of New South Wales, Victoria, Queensland, and the Dominion of New Zealand should each pay one-ninth. The construction and management of the cable were placed under the control of a Board composed of seven members—two each from Great Britain, Canada, and Australia, and one from New Zealand—called the Pacific Cable Board. The Australian shore-end of the cable was landed at Southport, Queensland, in March, 1902, and the cable was completed on the 31st October, 1902, and opened for traffic on the 7th December of the same year. There are cable-stations at Norfolk Island, Fiji, and Fanning Island, and a branch cable runs from Norfolk Island

to New Zealand. In 1910 the Board leased a wire from Bamfield, British Columbia, to Montreal, thus extending the Pacific cable system from Queensland to Montreal. The traffic is then carried across the Atlantic to the United Kingdom by the cables of the Anglo-American and Commercial Companies. The following table shews particulars of the revenue, expenditure, total loss, and the proportion of the loss payable by the Commonwealth for each financial year since the opening of the cable:—

**REVENUE, EXPENDITURE, AND LOSS ON WORKING OF PACIFIC CABLE.**  
**1903 to 1911.**

Year ended the 31st March.	Revenue.	Expenditure (in- cluding Annuities and Renewal Fund).	Loss.	Commonwealth Proportion of Loss.
	£	£	£	£
1903 ...	...	...	90,518	30,172
1904 ...	80,118	167,869	87,751	29,250
1905 ...	87,446	163,296	75,850	25,283
1906 ...	91,952	164,508	72,556	24,185
1907 ...	113,516	167,439	53,923	18,307
1908 ...	110,160	172,523	62,363	20,787
1909 ...	113,093	173,981	60,888	20,296
1910 ...	111,724	171,312	59,588	19,863
1911 ...	138,678	186,888	48,210	16,070

The total cost of construction to the 31st March, 1911, was £1,997,576, originally paid by Great Britain. The proportions of this cost payable by the other countries are to be paid off by 50 annual instalments. The total amount of the annuity paid to Great Britain during the year 1910-11 was £77,545, while the amount paid to the renewal fund was £30,000.

5. **New Zealand Cables.**—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1191 miles in length. The Australian shore-end of the cable is at Botany Bay, while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidised by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. The branch from Norfolk Island to New Zealand of the Pacific cable was opened on the 23rd April, 1902. The length of this cable is 597 miles, the New Zealand terminus being at Doubtless Bay in the north of the North Island. During 1911 a scheme to lay a second cable between New Zealand and Australia (Auckland to Sydney) was adopted by the various Governments concerned, and the necessary machinery legislation was passed. The new cable will have the effect of shortening the distance between the two Dominions and will also improve the connection between Australia and Canada by reducing by two the number of transmitting stations.

6. **The New Caledonian Cable.**—In April, 1892, a French company, known as the Compagnie Française des Câbles Télégraphiques, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the French Government to the extent of £8000, and by the Governments of New South Wales and Queensland to the amount of £2000 each annually for a period of thirty years. The cable was opened for use in October, 1893, the Australian shore-end being at Bundaberg. The Governments of New South Wales and Queensland are entitled to use the cable for the transmission of official messages up to the amount of their guarantees.

7. **Number of Cablegrams Received and Despatched, 1908 to 1910.**—The subjoined table shows the number of cablegrams received and despatched in the Commonwealth from 1908 to 1910:—

**CABLEGRAMS RECEIVED AND DESPATCHED, COMMONWEALTH, 1908-10.**

Particulars.	Cablegrams Received.			Cablegrams Despatched.			Total Cablegrams Received and Despatched.		
	1908.	1909.	1910.	1908.	1909.	1910.	1908.	1909.	1910.
Number...	221,976	221,442	241,723	231,214	231,701	254,666	453,190	453,143	496,389

The following table shows the total number of cablegrams received and despatched in each State during the year 1910. The figures given are exclusive of interstate cablegrams, which are classed as interstate telegrams (see § 2 hereof):—

**NUMBER OF CABLEGRAMS RECEIVED AND DESPATCHED IN EACH STATE, 1910.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.*	C'wealth.
Number received ...	115,619	79,730	9,699	18,108	13,162	5,405	241,723
„ despatched ...	119,657	81,667	11,898	16,615	17,220	6,228	253,285
Total ...	235,276	161,397	21,597	34,723	30,382	11,633	495,008

\* Exclusive of interstate cablegrams, which are included with interstate telegrams (see § 2 ante).

8. **Lengths of Cable Routes.**—The following table gives the lengths of various cable routes:—

**LENGTHS OF CABLE ROUTES.**

Via Roebuck Bay.		Via Port Darwin.		Via South Africa.	
	Miles.		Miles.		Miles.
Perth to Roebuck Bay ...	1,485	Adelaide to Port Darwin	2,134	Perth to Mauritius ...	4,417
Roebuck Bay to Banjoewangie ...	970	Port Darwin to Banjoewangie ...	1,150	Mauritius to Durban ...	1,786
Banjoewangie to London	9,841	Banjoewangie to London	9,841	Durban to Cape Town ...	800
				Cape Town to Madeira ...	5,715
				Madeira to Penzance ...	1,341
				Penzance to London ...	260
Total ...	12,296	Total ...	13,125	Total ...	14,319

Via Vancouver.		Via Russia.	
	Miles.		Miles.
Southport (Queensland) to Norfolk Island	963	Sydney to Port Darwin ...	2,992
Norfolk Island to Suva (Fiji) ...	1,129	Port Darwin to Hong Kong ...	4,237
Suva to Fanning Island ...	2,351	Hong Kong to Possiet Bay ...	2,647
Fanning Island to Bamfield (Canada) ...	3,980	Possiet Bay to Libau ...	6,399
Across Canada ...	3,450	Libau to Newbiggin (England) ...	1,657
Canada to Ireland ...	2,450		
Total ...	14,323	Total ...	17,932

9. **Cable Rates.**—In 1872 the cable rate to England was nine guineas for twenty words, but when word rates were brought into general use in 1875, the rate between Great Britain and Australia was fixed at ten shillings and sixpence, subsequently altered to ten shillings and eightpence. This remained the standard rate for eleven years, when the Eastern Extension Telegraph Company reduced it in 1886 to nine shillings and fourpence a word for ordinary messages, to seven shillings and a penny for Government messages, and to two shillings and eightpence a word for press messages. At a conference of the postal and telegraphic authorities held in March, 1891, the proposal to reduce the rates to four shillings a word for ordinary messages, three shillings and eightpence for Government, and one shilling and tenpence for press messages was agreed to, the States of New South Wales, Victoria, South Australia, Western Australia, and Tasmania undertaking to make good half the loss which the Eastern Company might suffer through such reductions. The States guaranteed to the company one-half of the amount of receipts short of the sum of £237,736—the amount received by the company in 1889 in respect of cable charges—the other half to be borne by the company. The Government of South Australia was also guaranteed by the other contracting States against any loss to the revenue which the lower cable rates might cause in the working of the overland lines. Queensland subsequently joined the other States in these guarantees. Owing to various circumstances the cable traffic did not respond to the reductions, and heavy losses were incurred. It was therefore decided at a conference held at Melbourne to increase the rates for ordinary messages to four shillings and ninepence per word. The new rates came into force on the 1st January, 1893, concurrently with an agreement under which New Zealand joined the guarantees to the company and to South Australia.

With a view to affording additional cable facilities and to keeping the Pacific Cable fully occupied during the whole twenty-four hours, proposals were made by the Postmaster-General's Department for the adoption of a system of deferred cablegrams, *i.e.*, for cablegrams to be delivered after a lapse of twenty-four hours at reduced rates of one shilling and sixpence per word for cablegrams in code, and one shilling per word for cablegrams in plain language. A meeting of representatives of the Administrations and companies concerned was held in London in November, 1910, and the new rates came into force on the 1st January, 1912. Messages can only be transmitted after non-urgent private cablegrams and press cablegrams. Those which have not reached their destination within a period of twenty-four hours from the time of handing in are transmitted in turn with cablegrams charged full rate. They may be sent *via* the Pacific or Eastern routes to all countries to which the ordinary rate exceeds tenpence per word.

On the 15th December, 1911, a system of deferred press cablegrams between Vancouver and Australia was instituted. The rate charged is one penny three-farthings per word, and the conditions of despatch are the same as those for private deferred cablegrams.

(i.) *Present Rates to Great Britain.* On the acceptance by three of the States of the terms offered by the Eastern Extension Telegraph Company for the construction of a cable *via* South Africa the rate for ordinary messages was reduced in May, 1900, to four shillings a word. It was further reduced to three shillings and sixpence in January, 1901, and to three shillings in January, 1902, at which amount the standard rate by all routes for cablegrams to Great Britain has since remained. The scale of reductions is governed by a revenue standard, and when the latter averages £330,000 per annum a further reduction to two shillings and sixpence will be made. In July, 1909, the "through" charge for press cables was reduced from one shilling to ninepence per word.

(ii.) *Rates to New Zealand.* As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence-halfpenny per word. Between New Zealand and Tasmania the charge was fixed at

fivepence-halfpenny a word, but it has since been reduced to fourpence-halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

**10. Subsidised Press Cable Service.**—In October, 1909, a Select Committee of the Commonwealth Senate was appointed to report upon the question of the supply, conditions of sale, and distribution, which control the Press Cable Service within and from outside the Commonwealth. A majority report of this Committee was issued in December, 1909, and recommended (a) the completion of an "All Red" cable route *via* Canada, (b) the conditional subsidisation of a press cable association, (c) the utilisation of the High Commissioner's office for the dissemination in Australia of Empire news, and (d) the amendment of the Copyright Act in regard to cables.

In accordance with the recommendations of this Committee the Commonwealth has granted a subsidy of £6000, extending over a period of three years, to the Independent Press Cable Service, on the conditions that at least 6000 cable words are supplied each week, to be sent *via* Pacific, and that any newspaper proprietary in the Commonwealth is permitted to become a subscriber at rates approved by the Government.

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**11. Cable Subsidies paid by each State, 1901 to 1910.**—The agreement between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. Since the year 1895 the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—have been met by the receipts, and the contracting States have, therefore, not been called upon to contribute.

(i.) *Total Subsidies Paid, 1901-10.* The following table shews the total amounts paid by way of cable subsidies for the calendar year 1901, and from 1904 to 1910 inclusive:—

**TOTAL AMOUNT OF CABLE SUBSIDIES PAID, 1901 to 1910.**

Year.	1901.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Amount ... £	13,207	37,911	35,160	24,997	30,837	29,313	40,898	26,537

(ii.) *Subsidies Paid by each State, 1910.* The total amount of cable subsidies paid prior to the year 1910 included the subsidy paid in respect of the Tasmania-Victorian cable service, which in 1909 amounted to £11,265.

As the agreement in connection with the Tasmanian cable expired in 1909, and as new cables have been laid by the Commonwealth Government (see page 780 *ante*), the guarantees were, in the course of the year 1910, reduced to those in connection with the New Caledonia and Pacific cables. Of the amount of cable subsidies paid by the Commonwealth in 1910, New South Wales and Queensland each contributed £2000 in connection with the New Caledonian cable, while New South Wales paid £6768, Victoria £7000, and Queensland £8769 towards the Pacific cable service subsidy.

## § 4. Telephones.

**1. Development of Telephone Services.**—The Postal Department has established telephone services in all the capital towns and in many of the important centres of population throughout the Commonwealth. Particulars as to the revenue from telephone services in each State for the years 1901 to 1910 are given on page 774 *ante*, while particulars of the expenditure on telephone works in each State for the year 1910 are given in a table on page 786.

(i.) *Number of Telephone Exchanges, etc., in Commonwealth, 1901 to 1910.* The following table shows the number of telephone exchanges, the number of telephone connections, and the length of telephone wire, exclusive of telegraph and railway telephone wire, in the Commonwealth at the end of the year 1901 and from 1906 to 1910 inclusive:—

**NUMBER OF TELEPHONE EXCHANGES AND CONNECTIONS AND LENGTH OF WIRE,  
1901 to 1910.**

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.
Telephone Exchanges ... No.	119	178	226	285	328	*678
„ Connections ... „	24,583	38,152	47,205	54,512	62,091	74,975
Length of Wire ... miles	47,276	78,854	119,052	145,572	166,489	220,174

\* In 1910, all places at which two or more subscribers were connected were classified by the Postmaster-General's Department as "telephone exchanges." Prior to that year the classification in the several States was not uniform.

(ii.) *Number of Telephone Exchanges, etc., in each State, 1910.* The following table gives corresponding particulars for each State at the end of 1910:—

**TELEPHONE EXCHANGES, CONNECTIONS, AND LENGTH OF WIRE IN EACH STATE,  
1910.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
Tel. Exchanges* No.	268	198	71	74	42	25	678
„ Connections „	30,574	20,221	8,343	6,099	7,319	2,419	74,975
Length of Wire miles	83,018	83,451	22,504	13,219	15,265	2,717	220,174

\* See note to previous table.

**2. Telephone Rates.**—The charges mentioned in the table hereunder are payable for the different classes of telephone services specified therein:—

**TELEPHONES.—RENTAL CHARGES, 1910-11.**

In Telephone Networks having a Population of—	Radius of Network with Main Exchange as Centre.	Minimum Annual Charge—		
		For an Exclusive Service.	For each Subscriber or Instrument on a Two-party Line.	For each Subscriber or Instrument on a Three or more party Service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 10,000 ...	5	3 0 0	2 10 0	2 0 0
„ 10,001 to 100,000 ...	10	3 10 0	2 15 0	2 5 0
„ 100,001 upwards ...	10	4 0 0	3 0 0	2 10 0

It is provided that for all effective calls originated the subscriber will be charged the following rates:—(a) For calls not exceeding 2000 half-yearly, two calls for one penny; and (b) for calls above 2000 half-yearly, three calls for one penny.

Another regulation permits persons occupying offices in the same building, or occupying the same private residence, to subscribe jointly under one exchange number (in addition to rental as for one person at the respective rates prescribed) of £1 per

annum for each additional subscriber. This fee covers the insertion of the additional subscriber's name in the telephone list. If additional instruments are required the subscribers must pay the rates prescribed for party lines.

3. **Miscellaneous Particulars, 1910.**—The following table gives various interesting particulars of the operation of the telephone services in each State for the year 1910 :—

### PARTICULARS OF OPERATION OF TELEPHONE SERVICES, 1910.

Particulars.				N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'with.
Telephone Exchanges* ... .. No.				268	198	71	74	42	25	678
Public Telephones† ... .. No.				499	529	230	295	184	331	2,068
Extension Lines—										
Metropolitan ... .. No.				4,236	3,872	657	393	1,139	172	10,469
Country ... .. No.				693	672	493	62	328	40	2,288
Total ... .. No.				4,929	4,544	1,150	455	1,467	212	12,757
Private Lines—										
Metropolitan ... .. No.				392	261	82	215	150	20	1,120
Country ... .. No.				664	210	392	96	47	190	1,599
Total ... .. No.				1,056	471	474	311	197	210	2,719
Connections—										
Central Exchange. ... .. No.				6,475	7,076	3,479	3,412	2,141	1,098	23,681
Suburban Exchanges ... .. No.				13,728	7,961	642	811	1,290	24	24,456
Country Exchanges ... .. No.				9,914	5,199	5,372	851	2,242	1,186	24,764
Total ... .. No.				30,117	20,236	9,493	5,074	5,673	2,308	72,901
Telephone instruments in use ... .. No.				37,130	26,629	9,493	7,362	7,263	3,215	91,092
Rental received: ... .. £				168,173	121,704	44,428	41,475	31,770	13,254	420,804
Length of wire opened during year... Miles				13,686	28,663	5,214	2,860	3,043	236	53,702
Total length of wire at end of year... Miles				83,018	83,451	22,504	13,219	15,265	2,717	220,174
Total cost to end of year ... .. £				903,682	590,363	305,590	274,890	198,666	83,373	2,356,564

\* See note to first table on previous page. † Comprises slot machines within telephone networks. The information furnished under this heading for 1909 (see Year Book No. 4, page 793) included public telephone stations, i.e., trunk line offices. The latter have now been omitted, as it is thought that they do not rightly come under the heading of "public telephones." ‡ For the year ended 30th June, 1910.

In 1910 the mileage of telephone cables (aerial and underground) was 1150, the length of telephone conduits in duct miles 389.07, whilst the mileage of telephone tunnels was 12.12. The total mileage of telephone trunk lines for the Commonwealth for the same period was 27,319, of which number 4878 were composed of single wire circuits, 7371 metallic circuits, and 15,070 superimposed circuits.

4. **Financial Position of Telephone Branch.**—In 1909 an investigation into the financial position of the telephone branch of the Postmaster-General's Department was commenced, and in December of that year a report was issued dealing with the telephone accounts of the system in the State of Victoria. This report shews that during each of the years 1901 to 1908 there was a profit on the working of the system, amounting in all to £150,580; in the financial year 1908-9 there was a loss of £7789, giving a net profit up to the 30th June, 1909, of £142,791.



## SECTION XIX.

## COMMONWEALTH FINANCE.

## § 1. General.

**1. Financial Provisions of the Constitution.**—The main provisions of the Constitution relating to the initiation and development of the financial system of the Commonwealth are those contained in Chapter IV., "Finance and Trade," being sections 81 to 105 of the Constitution Act. Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51.

**2. Departments Transferred or Transferable under Constitution.**—In section 69 it is provided that the Departments of Customs and Excise in each State should become transferred to the Commonwealth on its establishment, and that on a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments should become transferred:—

- (i.) Posts, telegraphs, and telephones.
- (ii.) Naval and military defence.
- (iii.) Lighthouses, lightships, beacons and buoys.
- (iv.) Quarantine.

Under proclamation dated 12th February, 1901, and published in the Commonwealth *Gazette* of the 14th of that month, the Departments of Posts, Telegraphs, and Telephones in each State became transferred to the Commonwealth as from the 1st March, 1901, while under a similar proclamation dated 19th February, 1901, and gazetted on the 20th, the Departments of Naval and Military Defence in each State also became transferred to the Commonwealth as from 1st March, 1901. In the case of Quarantine, an Act (No. 3 of 1908) has been passed and control has tentatively been assumed by the Commonwealth.

The requisite proclamation of transfer has not yet been made in the case of departments dealing with "Lighthouses, lightships, beacons, and buoys," nor has any legislation relative thereto been passed by the Federal Parliament, although the matter was before the legislature, in the form of a bill, during the sessions of 1909 and 1910. These departments, therefore, still remain under State control.

**3. Departments Transferable by Means of Commonwealth Legislation.**—In addition to the departments here mentioned which pass to the Commonwealth either automatically or by proclamation, there are several others whose duties the Commonwealth is empowered to undertake after the passing by the Commonwealth of the legislation necessary to authorise the assumption of such duties. These are referred to in section 51 of the Constitution, which contains a statement of all matters respecting which power is (subject to the Constitution) conferred on Parliament "to make laws for the peace, order and good government of the Commonwealth." The matters contained in this section include those already mentioned as being covered by section 69. The principal matters involving for the due performance of the duties connected therewith the creation or transfer of departments of the Public Service are:—

- (i.) Trade and commerce.
- (ii.) Taxation.
- (iii.) Bounties on production or export of goods.
- (iv.) Postal, telegraphic, telephonic, and other like services.
- (v.) Naval and military defence.
- (vi.) Lighthouses, lightships, beacons, and buoys.
- (vii.) Astronomical and meteorological.
- (viii.) Quarantine.
- (ix.) Census and statistics.
- (x.) Bankruptcy and insolvency.
- (xi.) Copyrights, patents, and trade marks.
- (xii.) Naturalisation and aliens.
- (xiii.) Marriage.
- (xiv.) Divorce and matrimonial causes.
- (xv.) Invalid and old-age pensions.
- (xvi.) Immigration and emigration.
- (xvii.) Conciliation and arbitration.

4. **Commonwealth Departments.**—As a result of legislation passed from time to time in accordance with section 51, various departments and sub-departments have been transferred from the States to the Commonwealth, whilst other departments necessary for the due performance of the Commonwealth functions have been brought into existence. In the former class are such departments as those of Patents, Trade Marks, Copyrights, Designs, Naturalisation and Meteorology, while in the latter are the Ministerial Departments of External Affairs, Home Affairs, Treasury, Trade and Customs, Defence, Attorney-General and Postmaster-General, as well as such general departments as Public Service Commissioner's Office, Treasury, Audit Department, Crown Law Department, Bureau of Census and Statistics, Federal Land Tax Office, and Prime Minister's Department. It may, therefore, be said that, so far as its financial aspect is concerned, the effect of Federation up to the present time has been the transfer from States to Commonwealth of the revenue obtainable from the great revenue-producing Departments of Customs and Excise, and of the expenditure connected with various departments whose number is gradually increasing, and that, in addition, the various functions of the Commonwealth have necessitated further new expenditure.

5. **Adjustment of Accounts between Commonwealth and States.**—The fact that the Departments of Customs and Excise were responsible in the several States for the production of a very large proportion of the total revenues of the States, and that the financial relief afforded to the States by means of the transfer of expenditure to the Commonwealth would not, at least initially, be at all commensurate with this transfer of revenue, naturally led to the inclusion in the Constitution of a provision for the repayment to the States of surplus Commonwealth revenue. The means to be adopted for securing an equitable allocation of such repayment amongst the several States received very extensive consideration at the several conventions at which the framing of the Constitution took place, and the basis ultimately agreed upon was that involving for at least ten years after the establishment of the Commonwealth the provisions of what was generally known as the Braddon clause (section 87), and for at least five years after the imposition of uniform duties of Customs, the scheme of allocation which became known as the "*book-keeping system*." (Sections 89 and 93.)

6. **The "Braddon" Clause.**—This clause (section 87 of the Constitution) was so called after Sir Edward Braddon, a Tasmanian delegate to the Federal Convention of 1897 and 1898, by whom it was introduced. In its original form the clause provided that for all time the Commonwealth should return to the States not less than three-fourths of the net revenue of the Commonwealth from duties of Customs and Excise, not prescribing, however, what should be returned to *each* State. At the Melbourne session of the Federal Convention, held in 1898, provision was made that surplus revenue, instead of

being returned to a State, might be applied towards the payment of interest on debts of that State taken over by the Commonwealth, and at the Premiers' Conference, held in Melbourne in 1899, a further amendment of the clause was effected by limiting its operations to a "period of ten years after the establishment of the Commonwealth, and thereafter until Parliament otherwise provides." The provisions of this clause *per se* were held to be complied with if the total amount returned to the States as a whole was not less than three-fourths of the total net revenue from Customs and Excise, and the Commonwealth was not under an obligation to return to each State three-fourths of the net Customs and Excise revenue collected in respect thereof. Thus, since the establishment of Federation, although the total amount of surplus Commonwealth revenue distributed amongst the States had in every year except 1907-8, 1908-9, and 1909-10 largely exceeded three-fourths of the total net revenue from Customs and Excise, the amount paid to one of the States, viz., Queensland, in several of these years fell short of three-fourths of the net Customs and Excise revenue collected in respect of that State. This occurred in the years 1901-2, 1903-4, 1904-5, 1907-8, 1908-9, and 1909-10, and was due in a large measure to the heavy expense involved in working the Commonwealth departments in that State. The amount returned to Tasmania for 1907-8, 1908-9 and 1909-10, also fell short of three-fourths of the net Customs and Excise revenue collected in respect of that State, while a similar shortage occurred in the two latter years in Victoria and Western Australia. In 1910-11 the payments to the States were for the first time made upon the new basis which will be treated more fully in paragraph 14.

7. **The "Book-keeping System."**—The scheme set forth in the Constitution for determining the amount to be paid to the several States was contained in sections 89 and 93, the former of which related to the period prior to the imposition of uniform duties of Customs, the latter to the first five years after the imposition of such duties, and thereafter "until Parliament otherwise provides." The principle involved in this scheme was that of crediting each State with the Commonwealth revenue collected in respect of that State, and of debiting it with the expenditure incurred on its behalf in connection with transferred departments, as well as its share on a *per capita* basis of the new expenditure of the Commonwealth. On this account the method of allocation provided by the Constitution became very generally known as the "*book-keeping system*." As the imposition of uniform duties of Customs and Excise took place throughout the Commonwealth on 9th October, 1901, the five years provided for in section 93 expired on 8th October, 1906, and consequently the "*book-keeping system*," though remaining in force until 30th June, 1910, was liable to be changed at any time by the Commonwealth Parliament. In section 93 provision was made that the duties chargeable on goods imported into one State and consumed in another should be credited to the consuming State, the evident intention being that of safeguarding the interests of such States by allowing to each the revenue which its citizens actually contributed, since presumably the duty ultimately falls upon the consumer. The balance in favour of any State was payable monthly by the Commonwealth.

8. **Western Australian Sliding Scale.**—Owing to the exceptional circumstances of Western Australia, and the fact that the immediate introduction of interstate freetrade would seriously interfere with the development of the State, through the diminution in the funds at the disposal of its Treasurer, provision was made in section 95 of the Constitution for the retention of interstate duties by Western Australia during the five years after the imposition of uniform duties, such duties to be collected by the Commonwealth. It was stipulated that during the first of these years the duty so imposed on any goods should not exceed the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and that during the succeeding years the amount imposed should not exceed four-fifths, three-fifths, two-fifths, and one-fifth respectively, and should cease at the expiration of the fifth year. This special concession to Western Australia, known as the "*Western Australian Special Tariff*," came to an end on 8th October, 1906, since when trade between all the States has been

ree. The amount collected under this special tariff during the five years of its operation from 9th October, 1901, to 8th October, 1906, was as follows:—

**DUTY COLLECTED UNDER W.A. SPECIAL TARIFF, 1901-2 to 1906-7.**

Year ... ..	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	Total.
Amount ... £	201,569	233,467	196,936	142,549	77,666	16,776	868,963

It will be noticed on reference to paragraph 14 hereinafter that by section 5, subsection (a) of "The Surplus Revenue Act of 1910," a special concession to Western Australia has been granted in the new financial arrangement, similar in principle to the "Western Australian Special Tariff."

**9. Special Assistance.**—A clause (section 96 of the Constitution) which has a very important bearing on the financial relations of the States and the Commonwealth was inserted by the Premiers' Conference of 1899. This clause provided that the Commonwealth Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit. It is said to have been introduced with the object of rendering the Constitution more elastic in the matter of aid to the States than would be possible if the Braddon clause and the book-keeping system were rigidly adhered to. No claim for such special assistance was made on the part of any of the States up to the year 1911, although it appears that the framers of the clause anticipated that it might be required during the early years of Federation. A claim, however, has now been made by Tasmania, and during the session of 1911 a Royal Commission, which had been constituted to investigate it, issued a report. It recommended a payment to Tasmania of £900,000, spread out over a period of ten years in view of the dislocation of the State finances due to Federation. The Government has intimated that during the session of 1912 a proposal will be submitted to Parliament granting Tasmania the sum of £500,000, spread out over a period of ten years.

**10. Transfer and Consolidation of State Debts.**—Under section 105 of the Constitution power is given to the Commonwealth Parliament to take over from the States either the whole of the public debts of the States as existing at the establishment of the Commonwealth, or a proportion of those debts calculated on a population basis, and to defray the interest payable in respect of such debts from the portions of the surplus revenue of the Commonwealth payable to the several States. The prospective savings in the matter of interest to be effected by means of the consolidation of the State debts formed a strong argument in pre-federal days for those supporting the federal movement. A drawback to the scheme provided for in the Constitution lay in the fact that under it the maximum amount of debt which could be assumed by the Commonwealth was slightly more than two hundred millions, as existing at the establishment of the Commonwealth, whereas since that date an addition of upwards of fifty millions had been made to the debts of the States. A "proposed law" to provide for an amendment of the Constitution, allowing the Commonwealth unlimited power to assume States debts, was passed by the Federal Parliament in the session of 1909, and the requisite referendum in connection with the amendment took place at the General Elections on 13th April, 1910, when the proposed law received the endorsement of the electorate.

**11. Disadvantages of the Book-keeping System.**—Under the book-keeping system of regulating the financial relations of the States and Commonwealth an endeavour was made to distribute the surplus revenue in the exact proportion in which it had been contributed by the several States. If these be regarded as States which had merely transferred some of their ordinary functions to the Commonwealth, the crediting each with the revenue received in respect to itself, and debiting it with the expenditure which the administration of Commonwealth affairs on its behalf had occasioned, might be

deemed to be as equitable as any method that could be suggested. There were, however, certain practical objections to such a system, which may be summarised as follows :—

- (i.) The trouble and expense which the necessary record entailed.
- (ii.) The practical impossibility of ensuring that in every case a consuming State would be duly credited with revenue collected on its behalf in a distributing State.
- (iii.) The difficulty involved in equitably determining the amount to be debited to the several States in respect of general Commonwealth expenses.
- (iv.) The uncertainty on the part of the State Governments as to the amount which would become available.
- (v.) The impossibility of securing independent State and Commonwealth finance.

**12. Proposals to Modify Book-keeping System.**—Various proposals were from time to time made for modifying the “book-keeping” system in such a manner as to obviate certain of its inherent disadvantages. The principal of these proposals were those which may be classified under the following heads :—

- (i.) A *per capita* distribution of surplus.
- (ii.) Payment of a fixed annual sum.
- (iii.) Payment of a fixed annual amount per head.
- (iv.) Increase in liability transferred to Commonwealth.

Some of the proposals that were made involved features of more than one of the systems here specified, and in certain cases combined them with those of the book-keeping system. A dissertation on the merits and demerits of any of the proposals would be beyond the scope of the present publication, but it may be noted that the scheme put forward by Sir George Turner when Commonwealth Treasurer was based on an increase in the liability transferred to the Commonwealth; that the scheme of Sir John Forrest and that of Sir William Lyne were based mainly on the payment of a fixed annual sum; while the scheme agreed to by the Commonwealth and State authorities in conference in 1909 and subsequently approved by the Federal Parliament was based on the payment of a fixed annual amount (25s.) per head of population. The scheme finally adopted by Mr. Fisher and ultimately assented to on 2nd September, 1910, retains this fixed annual payment of 25s. per head of population for a period of ten years.

**13. Interstate Conferences.**—Since the establishment of the Commonwealth, conferences of State Ministers have been held from time to time, at which proposals for adjusting the financial relations between the States and the Commonwealth were considered. At the conference held in Melbourne in October, 1906, and that held in Brisbane in May, 1907, the scheme put forward by Sir John Forrest was very fully discussed, and, in so far as the proposals for the allocation of surplus Commonwealth revenue are concerned, was, with some minor amendments, agreed to. The proposals made by Sir John Forrest for the transfer of State debts did not, however, meet with the approval of the conferences. After the retirement of Sir John Forrest from the Commonwealth Ministry, his scheme was abandoned by the Commonwealth Government. A fresh proposal by Sir William Lyne was substituted for it, and was considered by the Conference of Premiers held in Melbourne in 1908, who expressed their dissent from its provisions. A further Conference of Premiers was held in Hobart in March, 1909, at which a scheme was drawn up providing for the unlimited extension of the Braddon clause in an amended form, the amount returnable to the States to be not less than three-fifths of the gross revenue from Customs and Excise nor less than £6,750,000 in any one year, and a special concession to be made in the case of Western Australia. In August, 1909, a conference between Commonwealth and State authorities was held in Melbourne at which an agreement was arrived at between the Prime Minister of the Commonwealth and the Premiers of the several States. This Agreement was subsequently made the basis of a proposed law for amending the Federal Constitution, which,

during the session of 1909, was passed by the statutory majority in both Houses of the Federal Parliament. It is not necessary to reproduce the exact provisions of the Agreement, which were given *in extenso* in the third issue of the Year Book. The proposed law was submitted to a referendum at the elections of 13th April, 1910, and rejected.

**14. Financial Arrangement between Commonwealth and States.**—The financial relations between Commonwealth and States are now regulated by the "Surplus Revenue Act 1910," which amended the "Surplus Revenue Act 1908." The most important sections are given hereunder in full:—

3. "From and after 31st December, 1910, section 87 of the Constitution shall cease to have effect, so far as it affects the power of the Commonwealth to apply any portion of the net revenue of customs and excise towards its expenditure, and so far as it affects the payment of any balance by the Commonwealth to the several States, or the application of such balance towards the payment of interest on the debts of the several States taken over by the Commonwealth."
4. (a) "The Commonwealth shall during the period of ten years beginning on 1st July, 1910, and thereafter until the Parliament otherwise provides, pay to each State by monthly instalments, or apply to the payment of interest on debts of the State taken over by the Commonwealth, an annual sum amounting to twenty-five shillings per head of the number of the people of the State:—

Provided that in the six months ending the 30th June, 1911, the Commonwealth may deduct from the amounts payable in pursuance of this section the amounts set out in the Schedule."

- (b) "If in order to comply with section 87 of the Constitution the sums paid and applied under this section during the six months ending on 31st December, 1910, amount to more than twelve shillings and sixpence per head of the number of the people of the several States, the amounts paid and applied under this section during the next six months shall be correspondingly reduced, so that the amounts so paid and applied during the whole of the financial year ending on 30th June, 1911, shall not amount to more than twenty-five shillings per head of the number of the people of the several States, less the deductions provided for in the proviso to the last subsection."
5. (a) "The Commonwealth shall during the period of ten years beginning on the 1st July, 1910, and thereafter until Parliament otherwise provides, pay to the State of Western Australia, by monthly instalments, an annual sum which in the first year shall be two hundred and fifty thousand pounds, and in each subsequent year shall be progressively diminished by the sum of ten thousand pounds.
- (b) One-half of the amount of the payments so made shall be debited to all the States (including the State of Western Australia) in proportion to the number of their people, and any sum so debited to a State may be deducted by the Commonwealth from any amount payable to the State in pursuance of this Act."

Section 6 provides for the final payment of any surplus revenue there may be to the States "in proportion to the number of their people."

Section 7 provides that "the number of the people" in any financial year shall be deemed for the purposes of this Act to be the number estimated by the Commonwealth Statistician as existing on the 31st December falling in that financial year.

The Schedule referred to in section 4, sub-section (a) is as follows:—

### THE SCHEDULE.

Amounts to be deducted from payments to the States in the financial year ending 30th June, 1911.

New South Wales	...	...	...	£178,973
Victoria	...	...	...	143,092
Queensland	...	...	...	63,788
South Australia	...	...	...	30,529
Western Australia	...	...	...	20,113
Tasmania	...	...	...	13,505
				<hr/>
				£450,000

## § 2. Consolidated Revenue Fund.

### (A) Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on that fund, are contained in sections 81, 82, and 83 of the Constitution. In section 81 it is provided that "All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution." A strictly literal interpretation of this section would appear to require all loan and trust moneys received by the Commonwealth Executive to be paid to Consolidated Revenue. It is, however, held by Quick and Garran, in their "Annotated Constitution," that the "generic word *moneys* must be controlled by the preceding specific word *revenues*, and limited to moneys in the nature of revenue." This is the view of the matter which has been adopted by the Commonwealth Treasury in the preparation of its accounts. At present the Commonwealth has no Loan Account, but certain moneys received, which are not of the nature of revenue, are paid to Trust Account. As regards expenditure from the Consolidated Revenue Fund, section 82 provides that the costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund should form the first charge thereon, while section 83 stipulates that "no money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law." Such appropriations are either special, and as such are provided for by means of a permanent Act, or are annual, and provided for in an annual Appropriation Act.

### (B) Revenue.

1. **Total Collections.**—The consolidated revenue of the Commonwealth, which in 1901-2, the first complete financial year under the new régime, amounted to £11,296,985, had, in 1910-11, reached a total of £18,806,237, an increase in nine years of £7,509,252.

Particulars concerning the total amount of revenue collected by the Commonwealth Government from 1st July, 1906, to 30th June, 1911, are contained in the following table:—

## CONSOLIDATED REVENUE OF THE COMMONWEALTH, 1906-7 to 1910-11.

—	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
Commonwealth ...	£ 12,832,891	£ 15,019,034	£ 14,350,793	£ 15,540,669	£ 18,806,237

The revenue collected by the Commonwealth during the financial year 1907-8 was higher than in any preceding year, the large increase being mainly due to the additional revenue collected in connection with the new tariff introduced on the 8th August, 1907. For 1908-9 the revenue was lower than that for the preceding year, but the total for the Commonwealth shews a substantial excess over any year prior to 1907-8. For 1909-10 the revenue in all the States shewed a marked increase, and the total for the Commonwealth was the largest collected until in its turn it was largely exceeded by the total for 1910-11.

2. **Collections per Head.**—In the table given hereunder particulars are furnished of the amount of revenue per head of population collected in respect of the Commonwealth for the last five years:—

## COMMONWEALTH REVENUE PER HEAD OF POPULATION, 1906-7 to 1910-11.

—	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
Commonwealth ...	£ s. d. 3 2 7	£ s. d. 3 12 2	£ s. d. 3 7 9	£ s. d. 3 11 11	£ s. d. 4 5 0

3. **Sources of Revenue.**—The following table furnishes particulars concerning the Commonwealth revenue derived from each source during the years 1906-7 to 1910-11:—

## SOURCES OF COMMONWEALTH REVENUE, 1906-7 to 1910-11.

Sources of Revenue.	1906-7.	1907-8.	1908-9.	1909-11.	1910-11.
	£	£	£	£	£
Customs ... ..	7,660,874	9,341,108	8,626,521	9,505,855	10,507,080
Excise ... ..	1,987,682	2,304,244	2,217,546	2,087,310	2,473,364
Postal ... ..	3,128,574	3,300,096	3,409,426	3,731,741	3,906,015
Defence ... ..	5,112	13,565	5,024	21,847	57,520
Patents ... ..	18,017	17,421	15,367	16,644	21,235
Trade Marks, Copyrights, and Designs	6,390	8,657	6,110	4,790	5,365
Quarantine ... ..	...	...	...	4,724	7,068
Coinage ... ..	...	...	...	69,646	198,893
New revenue ... ..	12,529	25,837	35,978	63,076	...
Miscellaneous ... ..	13,713	8,106	...	...	35,954
Public Service Pension Funds, Repayments and Transfers	...	...	34,821	35,036	61,405
Land Tax ... ..	...	...	...	...	1,370,344
Northern Territory ... ..	...	...	...	...	10,521
Credit Balance Northern Territory Funds	...	...	...	...	151,513
Total ... ..	12,832,891	15,019,034	14,350,793	15,540,669	18,806,237

The maximum annual collection of Customs revenue during the period was the total of £10,507,080 obtained during 1910-11, the nearest approach to this figure being that of £9,505,855 obtained during the financial year 1909-10. The Customs revenue for 1906-7 was practically identical with that for 1901-2. The minimum annual collection was £7,660,874 in 1906-7. In the case of Excise a maximum for the period was attained in 1910-11. In the case of Postal revenue the amounts collected have increased almost continuously from year to year, the Postal revenue for 1910-11 exceeding that for 1906-7 by 25 per cent.



4. **Customs.**—As already noted, several of the provisions of the Constitution were made dependent for their date of commencement on the imposition of uniform duties of Customs. Thus the book-keeping system and the Western Australian special tariff provisions both hinged upon the date on which the uniform duties of Customs were imposed. The Bill to provide for the collection of such duties was introduced in the Commonwealth House of Representatives on 9th October, 1901, and, in accordance with the usual practice, a resolution to protect the revenue and provide for the collection forthwith of the duties specified in the Bill, was duly carried. This date, 9th October, 1901, is consequently that on which the uniform duties of Customs are considered as having been imposed. A reference to the various enactments of the Commonwealth Legislature relative to the imposition of Customs duties will be found in Section XV., "Commerce," pages 597 to 601.

5. **Customs Revenue for Past Five Years.**—Particulars for the Commonwealth as a whole, for the five years 1906-7 to 1910-11, are furnished in the following table:—

COMMONWEALTH CUSTOMS REVENUE, 1906-7 to 1910-11.

Classes.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Stimulants ... ..	2,223,431	2,281,424	2,252,380	2,330,215	2,564,101
Narcotics ... ..	941,337	1,057,996	961,411	994,077	1,089,932
Sugar ... ..	143,830	51,499	140,343	506,385	170,822
Agricultural products ... ..	738,612	806,526	886,612	855,313	869,708
Apparel and textiles ... ..	1,578,414	2,063,674	1,630,490	1,872,832	2,068,922
Metals and machinery ... ..	625,227	1,030,519	932,944	997,973	1,264,986
Oils, paints, etc. ... ..	141,314	197,840	206,688	199,377	239,229
Earthenware, etc. ... ..	170,332	278,201	230,795	247,491	334,834
Drugs and chemicals ... ..	60,365	77,281	71,589	76,898	92,857
Wood, wicker, and cane ... ..	219,433	360,699	336,361	324,197	463,289
Jewellery, etc. ... ..	210,818	256,835	198,196	222,749	263,818
Leather, etc. ... ..	172,459	218,918	208,120	253,376	303,988
Paper and stationery ... ..	145,241	193,813	164,677	167,531	204,009
Vehicles ... ..	101,782	148,003	95,888	122,212	170,940
Musical instruments ... ..	60,117	90,905	72,128	82,949	109,423
Miscellaneous articles ... ..	97,403	191,782	205,697	220,580	258,953
Other receipts ... ..	30,759	35,193	32,202	31,700	37,269
Total Customs ... ..	7,660,874	9,341,108	8,626,521	9,505,855	10,507,030

It will be seen that throughout the period here dealt with the Customs revenue from stimulants and narcotics has represented, approximately, 40 per cent. of the total Customs revenue. The other principal articles from which Customs revenue was derived were "apparel and textiles," "metals and machinery," and "agricultural products." The most marked increase in the amount of duty collected is in the class of "metals and machinery," the revenue under this head for 1910-11 exceeding that for 1906-7 by £639,759.

In all cases except those of "Sugar," "Agricultural products," "Oils, paints, etc.," and "Miscellaneous articles," the revenue for 1908-9 fell short of that for 1907-8, owing mainly to the somewhat abnormal collections of 1907-8, consequent on the tariff of that year.

6. **Excise Collections, 1906-7 to 1910-11.**—Particulars concerning the amount of Excise collected under each head during each of the years ending 30th June, 1907 to 1911, are given hereunder:—

## COMMONWEALTH EXCISE REVENUE, 1906-7 to 1910-11.

Particulars.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Beer ... ..	513,473	555,720	551,859	584,503	617,178
Spirits ... ..	285,295	351,763	243,736	267,877	331,024
Starch ... ..	27,321	25,917	23,558	3,897	507
Sugar ... ..	546,590	741,928	750,776	548,716	794,645
Tobacco ... ..	604,960	618,599	638,017	673,437	720,305
Licenses ... ..	10,043	10,250	9,667	8,880	9,705
Agricultural machinery ...	...	67	Dr. 67	...	...
Total Excise ...	1,987,682	2,304,244	2,217,546	2,087,310	2,473,364

Comparing the Excise collections for 1910-11 with those for 1906-7 it will be seen that the increase in the revenue from sugar was about 45 per cent., that from beer and tobacco about 20 per cent. each, and that from spirits about 16 per cent., while decreases were experienced in starch and licenses.

**7. Commonwealth Taxation.**—Under section 51, sub-section (ii.) of the Constitution, power is given to the Commonwealth Parliament to make laws with respect to taxation, but so as not to discriminate between States or parts of States. Section 90 of the Constitution makes the power of the Commonwealth Parliament to impose Customs and Excise duties an exclusive one, but it would appear that as regards all other forms of taxation the States and Commonwealth possess concurrent powers. The question of the imposition by the Commonwealth Parliament of direct taxes such as land and income taxes is one which has been the subject of considerable discussion, and the opinion has been expressed that the intention of the framers of the Constitution was that of restricting the powers of taxation of the Commonwealth to the imposition of Customs and Excise duties except in cases of great national peril. Whatever the intention of the framers may have been in this matter, the Constitution itself contains no such provision, and the Commonwealth Parliament is given an absolutely free hand in the imposition of taxation. Up to the end of the financial year 1909-10 the only taxes so levied were those of Customs and Excise, referred to in detail in the foregoing paragraphs. During the 1910 session of the Federal Parliament, however, an Act—assented to on 17th November, 1910—was passed, giving to the Commonwealth the power of levying a tax upon the unimproved value of all lands within the Commonwealth which were owned by taxpayers, and not specially exempted. Detailed reference to this Act is appended.

**8. Commonwealth Land Tax.**—(i.) *Legislation.* As previously indicated, the land taxation, as far as the Commonwealth is concerned, is regulated by "The Land Tax Assessment Act 1910," No. 22 of 1910, which received assent on 17th November, 1910. Under this Act the taxable value of all the land owned by any person is deemed to be (a) in the case of an absentee—the total sum of the unimproved value of each parcel of the land; (b) in the case of an owner not an absentee—the balance of the total sum of the unimproved value of each parcel of the land, after deducting the sum of £5000. Every part of a holding which is separately held by any occupier, tenant, lessee, or owner, is deemed to be a separate parcel. All land owned by a company is considered to be owned by the shareholders of the company as joint owners, in the proportion of their interests in the paid-up capital. It may be noted that a company is never treated as an absentee, but individual shareholders who are absentees are separately assessed and liable as such. Land owned by a Mutual Life Assurance Society (except such as it holds as mortgagee in possession, or which it has acquired by virtue of a mortgage) is deemed to be owned by the Society as trustee for the Australian policyholders in proportion to the surrender value of their policies. The amount of the tax collected during the financial year ending 30th June, 1911, was £1,370,344.

(ii.) *Exemptions.* The following are the principal exemptions:—

- (a) All land owned by a State or Municipal or other public authority.
- (b) All land owned by any Society registered under a State Act as a friendly society, or trades-union, or building society; excepting, in the case of the latter, such land as it might acquire through the foreclosure of a mortgage.
- (c) All land held in trust for a charitable or educational institution not carried on for the purposes of gain.
- (d) All land used as a site for—
  - (1) A place of worship or place of residence for clergy, or ministers, or order of a religious society;
  - (2) a public library, institute, or museum;
  - (3) a show ground;
  - (4) a public cemetery;
  - (5) a public garden, recreation ground, or reserve;
  - (6) a public road;
  - (7) a fire-brigade station.

(iii.) *Rates.* The rates of taxation are set forth in the Land Tax Act 1910 (No. 21 of 1910) according to the following schedules:—

#### FIRST SCHEDULE.

*Rate of tax when owner is not an absentee.*

For so much of the taxable value as does not exceed £75,001 the rate of tax per pound sterling shall be one penny where the taxable value is one pound sterling, and shall increase uniformly with each increase of one pound sterling in the taxable value, in such manner that—

the increment of tax between a taxable value of £15,000 and a taxable value of £15,001 shall be 2d.; the increment of tax between a taxable value of £30,000 and a taxable value of £30,001 shall be 3d.; the increment of tax between a taxable value of £45,000 and a taxable value of £45,001 shall be 4d.; the increment of tax between a taxable value of £60,000 and a taxable value of £60,001 shall be 5d.; and the increment of tax between a taxable value of £75,000 and a taxable value of £75,001 shall be 6d.

For every pound sterling of taxable value in excess of £75,000 the rate of tax shall be 6d.

#### SECOND SCHEDULE.

*Rate of tax when owner is an absentee.*

For so much of the taxable value as does not exceed £5000 the rate of tax per pound sterling shall be one penny.

For so much of the taxable value as exceeds £5000 but does not exceed £80,001 the rate of tax per pound sterling shall be 2d. where the excess is one pound sterling, and shall increase uniformly with each increase of one pound sterling in the taxable value in such manner that—

the increment of tax between a taxable value of £20,000 and a taxable value of £20,001 shall be 3d.; the increment of tax between a taxable value of £35,000 and a taxable value of £35,001 shall be 4d.; the increment of tax between a taxable value of £50,000 and a taxable value of £50,001 shall be 5d.; the increment of tax between a taxable value of £65,000 and a taxable value of £65,001 shall be 6d.; and the increment of tax between a taxable value of £80,000 and a taxable value of £80,001 shall be 7d.

For every pound sterling of taxable value in excess of £80,000 the rate of tax shall be 7d.

*Formation of the Land Tax Office.* Immediately after the passage of the legislation referred to in the preceding paragraphs, a Commissioner was appointed to administer the Act, and a Land Tax Office was created with branches in every State. At the very inception of the office its existence was threatened by litigation—the outcome of a feeling in certain quarters that the Federal Government, in entering the field of direct taxation, had exceeded the powers entrusted to it by the Constitution. With the object

of testing the legal position, a case was brought before the High Court [*Osborne v. The Commonwealth*] which resulted in favour of the Government.

*The First Assessments.* The first assessments were completed and the first tax paid in the financial year ending 30th June, 1911. The following table, compiled from returns furnished by the Commissioner of Land Tax shews the amounts of tax assessed and paid as at 30th June, 1911, for each State. A distinction has been drawn between resident and absentee assessments; and—as far as the payment of tax is concerned—a still further subdivision has been effected into town and country properties.

**PARTICULARS OF LAND TAX ASSESSMENT FOR EACH STATE FOR YEAR  
ENDING 30th JUNE, 1911.**

	No. of Returns Assessed.	Unim- proved Value as ascertained by Department.	Taxable Balance after deductions	Tax Assessed.			Yield per £ of taxable value.
				Town.	Country.	Total.	
New South Wales—		£	£	£	£	£	d.
Resident ... ..	4,514	79,188,969	53,762,042	194,037	495,004	689,041	
Absentee ... ..	548	2,073,068	2,063,032	12,419	11,780	24,199	
	5,062	81,262,037	55,825,074	206,456	506,784	713,240	3.07
Victoria—							
Resident ... ..	4,218	49,111,863	28,723,902	133,014	209,119	342,133	
Absentee ... ..	772	1,427,246	1,423,047	6,794	12,500	19,294	
	4,990	50,539,109	30,146,949	139,808	221,619	361,427	2.88
Queensland—							
Resident ... ..	1,709	15,513,613	10,298,928	39,131	75,848	114,979	
Absentee ... ..	288	452,518	451,792	2,298	1,677	3,975	
	1,997	15,966,131	10,750,720	41,429	77,525	118,954	2.66
South Australia—							
Resident ... ..	1,665	17,768,929	10,386,550	36,785	87,206	123,991	
Absentee ... ..	334	659,196	656,946	2,259	8,847	11,106	
	1,999	18,428,125	11,343,496	39,044	96,053	135,097	2.86
Western Australia—							
Resident ... ..	540	6,110,661	3,971,244	22,874	18,310	41,184	
Absentee ... ..	201	312,883	312,574	1,509	896	2,405	
	741	6,423,544	4,283,818	24,383	19,206	43,589	2.44
Tasmania—							
Resident ... ..	342	5,592,343	3,057,039	6,722	24,160	30,882	
Absentee ... ..	140	235,469	234,676	290	1,490	1,780	
	482	5,827,752	3,291,715	7,012	25,650	32,662	2.38
GRAND TOTAL—							
Resident ... ..	12,968	173,286,378	110,499,705	432,563	909,647	1,342,210	
Absentee ... ..	2,283	5,160,320	5,142,067	25,569	37,190	62,759	
	15,271	178,446,698	115,641,772	458,132	946,837	1,404,969	2.92

Although in the first column the total number of returns assessed appears as 15,271, the actual number of taxpayers was only 14,210. The difference is due to the fact that,

where the landowner is possessed of an estate in more than one State of the Commonwealth, one return is counted in each State affected for the interest concerned. The total number of taxpayers does not include those who are known as secondary taxpayers, viz., those who pay as company shareholders, or through trusts in cases where they own no land in severalty. The columns which relate to the amount of tax assessed and paid as at 30th June, 1911, will be subject to considerable modification, owing to the effect of the High Court's decisions in connection with the assessment of trust estates and secondary taxpayers. The work of re-assessment is not yet complete.

On reference to the first column, it will be seen that the number of absentee assessments is 2283, or about 15 per cent. of the total for the Commonwealth. When reference is made, however, to the total amount of tax paid it is found that only about  $4\frac{1}{2}$  per cent. is contributed by absentee owners, and this in spite of the fact that their estates are not favoured by any statutory deduction. This points to the fact that, on the whole, the absentee owners possess estates of comparatively low taxable value.

On comparing town and country properties it is seen that the former contributes about one-third of the total amount of tax, and the latter about two-thirds. In fact, the country assessments largely exceed the town assessments in every State, except Western Australia. With regard to the respective shares of the different States, New South Wales contributes about half the tax, or about 9s. per head of population; Victoria, with its much closer settlement, comes next with about one quarter of the tax, or 5s. 6d. per head; South Australia, Queensland, Western Australia, and Tasmania contribute to the balance in the order named.

The last column shows the amount paid in each State, per £ of taxable value. The influence of the large aggregations of property in New South Wales is at once apparent, for that State with 3.07d. per £ not only heads the list, but is actually the only State which exceeds the Commonwealth average.

The following table shows the area of land in each State and the areas held under the different kinds of tenure. To each column a subsidiary column is attached shewing the percentage which the total for the State bears to the total for the Commonwealth:—

### COMPARISON OF TENURES, TAXABLE AREAS, AND TAX AT 30th JUNE, 1911.

State.	Area.		Area of Alienated Land.		Area in process of Alienation (part only taxable).		Area held under Lease or License (part only taxable).		Area included in Taxable Returns.		Tax Assessed.	
	Acres.	% on T't'l	Acres.	% on T't'l	Acres.	% on T't'l	Acres.	% on T't'l	Acres.	% on T't'l	£	% on T't'l
N.S. Wales...	198,638,080	10.4	36,153,068	37.3	15,614,036	36.0	126,803,182	15.5	42,397,020	58.4	713,240	50.8
Victoria ...	56,245,760	3.1	23,442,000	24.2	5,094,000	11.7	15,378,000	1.8	8,962,838	12.5	361,427	25.8
Queensland	429,120,000	22.3	15,460,352	16.1	7,971,342	18.2	294,673,189	36.2	7,012,417	9.6	118,954	8.4
S. Australia	243,244,800	12.7	9,017,493	9.3	1,846,875	4.3	111,822,330	13.8	6,741,298	9.3	135,097	9.6
North Terr.	335,116,800	17.6	473,809	0.5	...	...	96,077,714	11.7	...	...	...	...
W. Australia	624,588,800	32.8	7,202,696	7.4	11,843,236	27.3	169,937,644	20.8	4,713,039	6.5	43,589	3.1
Tasmania ...	16,777,600	0.8	4,932,276	5.2	1,104,379	2.5	1,463,044	0.2	2,701,659	3.7	32,662	2.3
C'wealth ...	1,903,731,840	100.0	96,681,694	100.0	43,473,868	100.0	816,155,103	100.0	72,528,271	100.0	1,404,969	100.0

The areas given in this table are from the latest Lands Departments' Reports available. The column "Area of Alienated Land" refers to land held under deed only. Land in process of alienation does not include conditional leases in New South Wales which are taxable as leases. It includes, however, the tenure known as Conditional Purchase Lease in Victoria, which is the equivalent of a conditional purchase in New South Wales. Conditional Purchases are only taxable when all conditions except payment of balances have been fulfilled. With regard to areas held under lease or license, the total areas of this class in the several States are indicated.

It was only to be expected that there would be some movement of land consequent upon the operations of the Land Tax Act. The following table shews the number and unimproved value of estates bought and sold by taxpayers, for the period of nine months preceding 30th June, 1911 :—

**PURCHASES AND SALES BY TAXPAYERS OF TAXABLE LANDS FROM  
1st OCTOBER, 1910, to 30th JUNE, 1911.**

State.	Sales.		Purchases.	
	Number.	Unimproved Value.	Number.	Unimproved Value.
		£		£
Victoria and Central* ...	7,032	7,684,221	1,601	3,798,275
New South Wales... ..	7,134	6,931,090	1,151	3,496,973
Queensland ... ..	1,109	1,027,206	166	511,328
South Australia ... ..	2,059	1,798,545	744	1,135,069
Western Australia... ..	656	391,555	107	121,022
Tasmania ... ..	298	355,676	105	203,839
Total ... ..	18,288	18,188,293	3,874	9,266,506

\* Central returns relate to returns that include properties in more than one State.

It will be seen that there are many more sellers than buyers of the tax-paying class, but the average value of the purchases largely exceeds that of the sales.

The information necessary for grouping the estates into classes, according to their taxable value, is not yet available for publication.

9. **Details of Postal Revenue, 1906-7 to 1910-11.**—Particulars concerning the postal revenue of the Commonwealth for each of the financial years from 1906-7 to 1910-11 are contained in the following table :—

**COMMONWEALTH POSTAL REVENUE, 1906-7 to 1910-11.**

Particulars.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Private boxes and bags ...	15,933	15,868	17,548	19,078	20,993
Commission—					
Money orders & postal notes	92,240	94,624	100,034	104,457	112,568
Telegraphs ... ..	588,167	650,426	642,548	681,038	740,428
Telephones ... ..	388,226	410,741	441,551	509,623	518,857
Postage ... ..	1,968,950	2,043,777	2,111,333	2,253,500	2,363,385
Miscellaneous ... ..	75,058	84,660	96,412	164,045	149,784
Total ... ..	3,128,574	3,300,096	3,409,426	3,731,741	3,906,015

10. **Revenue from Patents.**—Under the Commonwealth Patents Act 1903, which was assented to on 22nd October, 1903, and came into force on 1st June, 1904, the complete control of the Patents administration of Australia passed from the several State Governments to that of the Commonwealth, which, under section 19 (a) of the Act

mentioned, was authorised to collect for each State the fees to which it was entitled under the State Act in respect of proceedings then pending.

The revenue collected since the Act came into force is shewn in the following table:—

**COMMONWEALTH PATENTS REVENUE, 1903-4 to 1910-11.**

	*1903-4.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£	£	£	£
Revenue ...	1,518	10,559	23,936	18,017	17,421	15,367	16,644	21,295

\* June only.

It may be noted that, in their financial statement for 1903-4, the Commonwealth Treasury has credited the patents revenue for that year partly to "Miscellaneous Receipts" and partly to "New Revenue."

**11. Revenue from Trade Marks, etc.**—Under the several Acts of the Commonwealth Legislature relating to trade marks, copyrights, and designs, the Commonwealth Government has assumed the exclusive administration of such matters, and now collects all revenue accruing therefrom. The following table gives particulars of the amounts since this item first appeared in the Commonwealth accounts:—

**COMMONWEALTH TRADE MARKS, COPYRIGHTS, AND DESIGNS REVENUE,  
1906-7 to 1910-11.**

	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Revenue ...	6,390	8,657	6,110	4,790	5,265

**12. Defence Revenue.**—The revenue appearing under the head of "Defence" comprises the receipts derived from the sale of stores and clothing, from fines, etc., and for 1910-11 amounted to £57,520.

**13. Coinage.**—The revenue for the Commonwealth under this head is derived from the profit on coin issued; and is made up of £191,509 from silver coin and £7384 from bronze coin.

**(C) Expenditure.**

**1. Nature of Commonwealth Expenditure.**—The disbursements by the Commonwealth Government of the revenue collected by it fell naturally, under the "book-keeping" system, into three classes, viz.:—

- (a) Expenditure on transferred services.
- (b) Expenditure on new services.
- (c) Payment to States of surplus revenue.

Of these three, only the two first were actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution the expenditure on transferred services was, under the "book-keeping" system, debited to the several States in respect of which such expenditure was incurred, while the expenditure on new services was distributed *per capita*. Surplus Commonwealth revenue was paid to the States monthly. During the earlier years of Federation, viz., until the end of the year 1903-4, new works, etc., for transferred

departments were treated as transferred expenditure, and were charged to the States on whose behalf the expenditure had been incurred. In subsequent years all such expenditure was regarded as expenditure on new services and was distributed amongst the States *per capita*. Under the new system of keeping the accounts there is no further debiting of expenditure to the several States.

2. **Total Expenditure.**—The total expenditure by the Commonwealth Government during the period 1906-7 to 1910-11 is shewn in the following table :—

**COMMONWEALTH EXPENDITURE, 1906-7 to 19 0-11.**

	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Commonwealth ...	4,987,317	6,162,129	6,420,398	7,499,516	13,158,529

The expenditure for 1910-11 was higher than that for any preceding year, and was considerably higher than the expenditure for 1906-7.

3. **Expenditure per Head.**—Particulars concerning the Commonwealth expenditure per head are furnished hereunder :—

**COMMONWEALTH EXPENDITURE PER HEAD, 1906-7 to 1910-11.**

	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Commonwealth ...	1 4 5	1 9 7	1 10 4	1 14 8	2 19 6

4. **Details of Expenditure.**—During the five years between 1905-6 and 1910-11 the total cost of the several departments increased from £4,497,542 to £13,158,529, an increase of £8,660,987, or about 193 per cent. The expenditure in the Department of Trade and Customs increased during the period by £37,612, or about 14 per cent., and in the case of Defence by £446,203, or 47 per cent. Advances under other heads amounted to £782,845, or 28 per cent., in that of the Postal Department, and no less than £6,642,500, or 1305 per cent., in the case of remaining expenditure. It should be noted in this connection, however, that the increase of £782,845 in the postal expenditure was accompanied by an increase of £1,130,351 in the postal revenue, and that a very considerable portion of the increase in the remaining expenditure was due to the heavy annual appropriations for Invalid and Old Age Pensions and also for fleet construction.

5. **New Works, etc.**—As previously mentioned, the Commonwealth expenditure on new works, etc., for transferred departments was, prior to 1904-5, included under the head of "transferred" expenditure, but in that and subsequent years up to 1909-10 has been treated as "other" expenditure and debited to the States *per capita*. Particulars of the expenditure on new works, etc., during the last five years are given in the following table :—

**COMMONWEALTH EXPENDITURE ON NEW WORKS, etc., 1906-7 to 1910-11.**

Departments.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Trade and Customs ...	1,162	8,972	20,019	5,124	...
Defence ...	195,159	440,918	101,020	337,961	...
Postal ...	275,737	427,006	541,809	555,557	...
Sundry departments ...	...	52	4,339	2,526	2,452,960
Total ...	472,058	876,948	667,187	901,168	2,452,960



It will be seen that the Commonwealth expenditure under this head has increased considerably in recent years, the total for 1910-11 being more than five times as great as that for 1905-6. The main cause of the great increase in 1910-11 was the large expenditure on fleet construction.

6. **Cost of Departments, etc.**—Arranged in such a manner as to shew under each Department the expenditure on behalf of that Department, the cost of the several branches of the Commonwealth service for the years 1906-7 to 1910-11 was as follows:—

**COST OF COMMONWEALTH DEPARTMENTS, etc., 1906-7 to 1910-11.**

Departments, etc.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Governor-General ... ..	18,612	18,927	22,554	21,908	20,884
Parliament ... ..	177,061	153,414	163,991	220,233	211,558
External Affairs ... ..	67,241	55,061	53,513	80,469	454,128
Attorney-General ... ..	27,609	32,216	32,027	32,349	35,329
Home Affairs ... ..	41,385	61,580	110,291	88,112	179,097
Treasury ... ..	17,768	20,413	34,473	74,108	1,960,318
Trade and Customs ... ..	634,328	914,973	837,741	777,788	1,051,497
Defence ... ..	1,035,795	1,334,744	1,060,590	1,534,881	1,395,798
Postmaster-General ... ..	2,966,098	3,359,290	3,625,402	3,786,755	3,559,785
All other Expenditure ... ..	1,420	211,511	489,816	882,913	4,290,135
<b>Total ... ..</b>	<b>4,987,317</b>	<b>6,162,129</b>	<b>6,420,398</b>	<b>7,499,516</b>	<b>13,158,529</b>

The largeness of the expenditure under the head of Parliament in the years 1906-7 and 1909-10 was in great measure due to the fact that the general elections were held in those years, while the expenditure in connection with the sugar bounties is mainly responsible for the variations which have taken place in the cost of the Department of Trade and Customs. The amount paid in Old-Age and Invalid Pensions is included in Treasury expenditure for the first time in 1910-11. It may be noted that the great increase in the item "all other expenditure" for the year 1910-11 is owing to the inclusion in it for the first time of the expenditure on "new works" which had formerly been debited to the departments in which it had been incurred. More detailed reference to the items included under the above general heads is furnished in the succeeding paragraphs.

7. **Governor-General.**—In section 3 of the Constitution it is enacted that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connection with the Governor-General and his establishment for the five years 1906-7 to 1910-11 is as follows:—

**EXPENDITURE, GOVERNOR-GENERAL AND ESTABLISHMENT, 1906-7 to 1910-11.**

Details.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Salary ... ..	10,000	10,000	10,000	10,000	10,000
Repairs, etc., Government Houses ... ..	6,232	7,034	8,941	7,754	6,848
Contingencies ... ..	2,380	1,893	3,613	4,154	4,036
<b>Total ... ..</b>	<b>18,612</b>	<b>18,927</b>	<b>22,554</b>	<b>21,908</b>	<b>20,884</b>

8. **Parliament.**—Under this head have been grouped all the items of expenditure connected with the Parliamentary Government of the Commonwealth, including the

salaries of the Ministers and the allowances to senators and members of the House of Representatives. Details for the five years 1906-7 to 1910-11 are furnished in the table given hereunder:—

### EXPENDITURE, COMMONWEALTH PARLIAMENT, 1906-7 to 1910-11.

Details	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Salaries of Ministers ... ..	11,947	12,000	12,000	12,000	12,000
Allowances to Senators ... ..	14,367	19,446	20,406	21,368	21,519
Allowances to Members of House of Representatives ... ..	27,389	41,231	43,418	37,112	43,205
Officers, staff, contingencies, etc. ... ..	27,745	32,273	30,127	31,458	30,938
Repairs, maintenance, etc. ... ..	846	672	2,178	2,636	1,939
Printing ... ..	12,346	19,139	13,400	15,660	16,507
Travelling expenses of Members and others	9,373	8,982	8,841	9,767	9,153
Insurance ... ..	342	342	342	342	342
Electoral Office ... ..	5,085	5,824	6,002	6,191	5,288
Election expenses ... ..	36,113	4,080	54	49,958	5,364
Referendum ... ..	793	...	...	...	47,487
Administration of Electoral Act ... ..	30,715	9,425	27,223	33,602	17,437
Miscellaneous ... ..	...	...	...	139	379
• Total ... ..	177,061	153,414	163,991	220,233	211,558

In section 66 of the Constitution provision is made that there shall be payable out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers of State, an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This provision is still in force. Allowances to senators and members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides each such allowance shall consist of £400 a year, reckoned from the day on which the member takes his seat. During the second session of the Commonwealth Parliament in 1907 the question of allowances to members was under consideration, and an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907.

9. **External Affairs.**—Under the control of the department of External Affairs is placed the expenditure in connection with the Executive Council, the London Office, Papua and the Northern Territory. The expenditure in connection with the Northern Territory is exclusive of the Customs and Postal expenditure. Particulars for the five years 1906-7 to 1910-11 are as follows:—

### EXPENDITURE, EXTERNAL AFFAIRS DEPARTMENT, 1906-7 to 1910-11.

Details.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
High Commissioner ... ..	...	...	...	...	3,000
Chief Office ... ..	9,248	9,172	11,329	13,882	13,862
Executive Council ... ..	887	870	970	781	737
London Office ... ..	1,559	2,215	3,650	4,647	17,286
Papua ... ..	23,626	25,084	22,100	28,549	30,615
Rents, repairs, &c. ... ..	498	469	541	820	655
Miscellaneous ... ..	31,423	17,251	14,923	31,790	61,626
Northern Territory ... ..	...	...	...	...	326,347
Total ... ..	67,241	55,061	53,513	80,469	454,128

10. **Northern Territory.**—The Department of External Affairs assumed control of the administration of the Northern Territory from 1st January, 1911, and separate accounts were issued in the Treasurer's statement for the financial year ending 30th June, 1911. The chief source of revenue for the year was the Customs and Excise, amounting to £12,366. The Postal revenue amounted to £2691, and the railway receipts for the half-year to £5567, whilst the total revenue was £25,578. The chief items of expenditure were as follows:—Postal Department, £15,797; goldfields and mining, £5425; railways, £5882; and police, £4388. The last three items represented expenditure for half a year only, and the total expenditure was £52,103. The Commonwealth received £151,513 from South Australia as the credit balance of the Northern Territory funds, but at the same time assumed responsibility for interest on loans and redemptions, which for the half-year ending 30th June, 1911, amounted to £291,844. Consequently at 30th June, 1911, there was a deficiency of £166,856.

11. **Papua.**—The sums shewn in the above table as expenditure in connection with Papua represent the Commonwealth grants towards the cost of administering that territory, as well as certain additional amounts. The ordinary revenue and expenditure of Papua are kept distinct from those of the Commonwealth. Apart from the Commonwealth contribution the principal source of revenue is the Custom House. Details for the five years 1906-7 to 1910-11 are as follows:—

PAPUAN REVENUE, 1906-7 to 1910-11.

Details.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11. (estimated).
	£	£	£	£	£
Customs dues ... ..	15,924	18,206	20,758	24,901	27,320
Other collections ... ..	5,889	7,813	9,948	12,017	8,568
Commonwealth grant ... ..	20,000	25,000	20,000	25,000	25,000
Total ... ..	41,813	51,019	50,706	61,918	60,888

One of the largest items of Papuan expenditure is the maintenance, etc., of vessels and boats, including the steam yacht "Merrie England," the total outlay under this head for 1910-11 being no less than £6043. The expenditure on public justice for 1910-11 totalled £19,847, comprising "magistrates, etc.," £10,173; "armed native constabulary," £7200, and "gaols," £2474; on public works, £7420; and on the Department of Agriculture, £2479. The total expenditure for each of the five years 1906-7 to 1910-11 was as follows:—

PAPUAN EXPENDITURE, 1906-7 to 1910-11.

Particulars.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11. (estimated).
	£	£	£	£	£
Total expenditure ... ..	45,336	48,525	51,036	64,874	60,888

12. **Attorney-General's Department.**—The rapid growth in the expenditure connected with this Department during 1906-7 and 1907-8 was brought about in large measure by the extension of the Federal High Court, the total cost of which, including the Court of Conciliation and Arbitration, for the year 1910-11 amounted to £25,850. Details for the five years 1906-7 to 1910-11 are furnished hereunder:—

**EXPENDITURE, ATTORNEY-GENERAL'S DEPARTMENT, 1906-7 to 1910-11.**

Details.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Attorney-General's Office ...	3,540	4,286	3,705	3,684	3,805
Crown Solicitor's Office ...	2,613	2,993	3,242	3,458	4,472
Salaries of Justices of High Court ...	13,815	15,500	15,500	15,500	15,500
High Court expenses ...	6,063	7,022	6,791	6,888	7,459
Court of Conciliation & Arbitration ...	505	708	1,746	1,289	2,891
Rent, repairs, etc. ...	1,073	1,707	1,043	1,530	1,202
<b>Total ...</b>	<b>27,609</b>	<b>32,216</b>	<b>32,027</b>	<b>32,349</b>	<b>35,329</b>

**13. Home Affairs Department.**—The creation of new departments such as the Bureau of Census and Statistics, and the Meteorological Bureau, and the extension of the field of operations of the Public Works branch, all of which are grouped for general administrative purposes under the Department of Home Affairs, have led to a considerable increase in the expenditure. The heaviness of the expenditure of this department for 1908-9 was, in a large measure, due to the cost incurred by the Commonwealth in connection with the reception of the American fleet; whilst that of 1910-11 was mainly due to the appropriation for the census. Particulars for the five years 1906-7 to 1910-11 are as follows :—

**EXPENDITURE, HOME AFFAIRS DEPARTMENT, 1906-7 to 1910-11.**

Details.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Chief Office ...	8,864	9,257	10,383	11,454	14,178
Public Service Commissioner ...	12,738	14,818	15,636	15,952	16,989
Public Works ...	9,825	10,570	15,686	17,738	11,505
Census and Statistics ...	5,007	9,781	12,394	15,137	106,567
Meteorological Bureau ...	888	9,182	16,818	16,414	17,389
Rents, repairs, etc. ...	3,731	5,819	5,039	5,882	4,845
Reception of United States Fleet ...	...	...	32,580	...	...
Miscellaneous ...	332	2,153	1,755	5,535	7,624
<b>Total ...</b>	<b>41,385</b>	<b>61,580</b>	<b>110,291</b>	<b>88,112</b>	<b>179,097</b>

**14. Treasurer's Department.**—The sub-departments under the control of the Commonwealth Treasurer are the Treasury, the Audit Office, the Old Age Pensions Department, and the newly-formed Land Tax Office. During the financial year 1908-9 the expenditure under this department was swelled by a donation of £10,000 to the Sicily Earthquake Relief Fund, and in 1909-10 by the increased expenditure on salaries, etc., in the Old Age Pensions Department. The statements in previous Year Books have been rearranged so as to include expenditure on Invalid and Old Age Pensions from 1907-8; consequently, from that year onward until 1910-11 the amounts given below differ from those on page 803 by the item "Invalid and Old Age Pensions." Details of the expenditure of this department for each of the five years 1906-7 to 1910-11 are furnished hereunder :—

## EXPENDITURE, TREASURER'S DEPARTMENT, 1906-7 to 1910-11.

Details.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Treasury ... ..	8,960	10,259	11,113	11,862	12,273
Old-age pensions—Salaries, etc. ...	...	...	2,297	36,423	37,492
Audit ... ..	7,003	7,804	7,996	8,593	8,819
Rents, repairs, etc. ... ..	1,285	1,751	1,884	3,410	5,293
Donation to Sicily earthquake relief funds ... ..	...	...	10,000	...	...
Miscellaneous ... ..	520	599	1,183	13,820	21,873
Invalid and Old-age pensions ...	...	193,621	462,528	841,181	1,874,568
Total ... ..	17,768	214,034	497,001	915,289	1,960,318

15. **Trade and Customs.**—Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar bounties and the expenses in connection therewith. The large divergencies in the total expenditure which these figures exhibit for recent years have been mainly due to variations in the amount payable in respect of sugar bounties. Particulars for the five years 1906-7 to 1910-11 are given in the following table:—

## EXPENDITURE, TRADE AND CUSTOMS DEPARTMENT, 1906-7 to 1910-11.

Details.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Chief Office ... ..	7,449	10,902	12,223	11,954	13,260
Customs (ordinary) ... ..	244,574	255,531	256,937	255,779	286,410
Patents ... ..	10,017	12,960	14,245	19,284	20,140
Trade Marks and Copyrights ... ..	3,998	4,954	3,655	...	...
Fisheries ... ..	...	...	3,110	5,605	5,354
Analyst ... ..	...	...	2,010	1,995	2,511
Audit (proportion) ... ..	4,053	6,140	7,019	7,426	7,281
Quarantine ... ..	...	53	808	23,355	21,246
Pensions and retiring allowances ...	6,194	6,586	6,787	8,058	10,308
Rents, repairs, etc. ... ..	9,144	10,661	9,932	9,994	12,068
Sugar bounties and expenses ... ..	335,916	584,622	483,707	407,777	630,762
Bounties ... ..	...	176	2,633	5,885	11,740
New works, etc. ... ..	1,162	8,972	20,019	5,124	...
Miscellaneous ... ..	11,821	13,416	14,656	15,552	30,417
Total ... ..	634,328	914,973	837,741	777,788	1,051,497

16. **Cost of Collection.**—Excluding from the above the expenditure incurred in connection with Patents, Trade Marks, Copyrights, Quarantine, Fisheries, Analyst, and Sugar and other Bounties, the balance may be considered as representing approximately the cost entailed by the collection of the Customs and Excise revenue of the Commonwealth. Details for the five years 1906-7 to 1910-11 are as follows:—

## COST OF CUSTOMS AND EXCISE COLLECTION, 1906-7 to 1910-11.

Particulars.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Gross Customs and Excise revenue ... ..	9,648,556	11,645,352	10,844,067	11,593,164	12,980,444
Cost of collection ... ..	284,397	312,207	329,583	313,887	330,318
Net revenue ... ..	9,364,159	11,333,145	10,514,484	11,279,277	12,650,126
Percentage of cost of collection on gross revenue ... ..	2.95%	2.68%	3.04%	2.71%	2.54%

It will be seen that throughout the period the cost of collecting the Customs and Excise revenue has been rather less than 3 per cent. of the revenue collected, varying only between 2.68 per cent. in 1907-8 and 3.04 per cent. in 1908-9.

17. **Defence.**—The Commonwealth expenditure in connection with Defence, which in 1901-2 amounted to £861,218, had by 1907-8 grown to £1,334,744, but there was a decrease in 1908-9 of nearly £300,000 on the previous year which was more than counterbalanced by a large rise in 1909-10. A slight fall was experienced in 1910-11 owing to the loss of the item "new works." The largeness of the expenditure for 1907-8 was due mainly to the provision made in that year for new works. Particulars for the five years 1906-7 to 1910-11 are as follows:—

## EXPENDITURE, DEFENCE, 1906-7 to 1910-11.

Details.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Chief Office ... ..	19,246	21,913	23,884	26,366	32,609
Military ... ..	535,178	577,627	625,600	853,420	1,040,981
Naval ... ..	250,200	254,069	259,251	263,143	273,076
Audit (proportion) ... ..	802	810	960	954	1,142
Pensions and retiring allowances ... ..	974	974	1,017	781	965
Rents, repairs, etc. ... ..	27,386	32,023	29,798	29,621	42,863
New works, etc. ... ..	195,159	440,918	101,020	337,961	...
Miscellaneous ... ..	6,850	6,410	9,060	22,635	4,162
Total ... ..	1,035,795	1,334,744	1,050,590	1,534,881	1,395,798

18. **Postal.**—From a total of £2,966,098 in 1906-7 the cost of the department under the control of the Postmaster-General advanced to £3,559,785 in 1910-11, an increase of £593,687. Details for the five years 1906-7 to 1910-11 are furnished hereunder:—

## EXPENDITURE, POSTAL DEPARTMENT, 1906-7 to 1910-11.

Details.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Chief Office ... ..	8,125	9,664	10,780	12,324	14,208
Postal Dept. (ordinary) ... ..	2,618,767	2,848,196	2,986,992	3,123,357	3,441,720
Audit (proportion) ... ..	2,194	1,981	2,393	2,398	2,704
Pensions and retiring allowances ... ..	16,573	19,419	26,186	32,083	31,209
Rents, repairs, etc. ... ..	43,235	49,257	51,454	54,484	62,454
New works, etc. ... ..	275,737	427,006	541,809	555,557	...
Miscellaneous ... ..	1,467	3,767	5,788	6,552	7,490
Total ... ..	2,966,098	3,359,290	3,625,402	3,786,755	3,559,785

19. **Miscellaneous.**—In addition to the foregoing there are certain items which do not come under any of the heads enumerated. For 1910-11 the total expenditure under this heading was £4,290,135, made up of £2,452,959 for new works, and two equal payments of £918,588 into the trust fund for the purposes respectively of old-age pensions and the construction of the fleet. The entire expenditure for new works now appears as a separate item instead of being debited to the different departments.

(D) **Subsidy Paid to States.**

1. **Net Revenue.**—As mentioned in sub-section 1 of this section, the Constitution provided under sections 87, 93 and 95 for the payment to the States of all surplus revenue of the Commonwealth, such payment to amount in the aggregate during the continuation of the Braddon clause to not less than three-fourths of the net revenue from Customs and Excise. The expression "net revenue" used in section 87 has been taken to mean the gross revenue less drawbacks and refunds, and less also cost of collection. This view, adopted by the Commonwealth Government, was that indicated by Quick and Garran in their "Annotated Constitution of the Australian Commonwealth," in which they say: "The net revenue from duties of Customs and Excise is the total receipts from these sources after deducting the cost of collection. No attempt was made in the Constitution to define the deductions which may be made in order to arrive at the net revenue; this is a matter of book-keeping, which is left wholly to the Executive Government." In actual practice the statutory three-fourths of net Customs and Excise revenue was ascertained by the Commonwealth Treasury by deducting from the total Customs and Excise revenue (less drawbacks and refunds) the "transferred" expenditure of the Department of Trade and Customs and the expenditure on new works for that department, and taking three-fourths of the result.

2. **Payments to the Several States.**—In the following table are furnished particulars relative to the amounts actually paid to the several States on account of each of the financial years 1906-7 to 1910-11:—

**COMMONWEALTH SUBSIDY PAID TO STATES, 1906-7 to 1910-11.**

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
New South Wales ...	3,025,137	3,617,472	3,326,276	3,480,314	1,954,986
Victoria ...	2,201,013	2,377,708	1,987,435	2,109,379	1,617,572
Queensland ...	938,935	1,038,267	1,027,047	1,099,383	691,625
South Australia ...	644,564	791,664	716,957	842,508	514,622
Western Australia ...	774,882	751,735	627,933	707,672	591,243
Tasmania ...	261,043	280,059	244,747	253,180	233,143
Total ...	7,845,574	8,856,905	7,930,395	8,492,436	5,603,191

Taking the States as a whole the surplus Commonwealth revenue paid on account of the year 1907-8 was higher than that paid on account of any other financial year. As regards the individual States the maximum payment took place in New South Wales and Victoria in 1907-8, in Queensland and South Australia in 1909-10, in Western Australia in 1902-3, and in Tasmania in 1901-2. The largeness of the amount returned by the Commonwealth to the States in respect of 1907-8 was in great measure due to the increased Customs and Excise revenue collected under the new tariff of that year. For 1908-9 the surplus revenue paid to the States was lower in all cases than that for 1907-8. This was due in part to the fact that the 1907-8 payments were somewhat abnormal, and in part to the retention by the Commonwealth in 1908-9 of all revenue in excess of the statutory three-fourths of net Customs and Excise Revenue. In 1909-10 the surplus revenue returned to the States was higher in every case than in 1908-9. In 1910-11 owing to the new system of allotting the Commonwealth subsidy the amounts received by each State were the smallest for the period under review.

Trust Accounts.	Balance at 30th June, 1911.	Trust Accounts.	Balance at 30th June, 1911.
	£		£
Harb'r & Coastal Defence (naval)	322	Papua ... ..	2,740
C'wealth Ammunition Material	39	Officers' Assurance...	917
Small Arms Ammunition ...	28,863	Defalcations ... ..	177
Defence Clothing Material ...	8,337	Guarantee Fund ... ..	5,805
Small Arms... ..	12,663	Naval Agreement Act ...	860
Unclaimed Militia Pay—military	1,774	Repatriation of Pacific Islanders	35
"                 "       naval	352	London Liabilities ... ..	1,140,282
Military Expenses ... ..	40,964	Minerals Account ... ..	892
Customs Officers' Overtime ...	740	N. Territory Sinking Fund ...	4,617
Money Order ... ..	40,000	Quarantine ... ..	117
International Postal & Money		Naval Defence ... ..	918,587
Order ... ..	19,996	Stamp Printing ... ..	276
Pacific Cable Board ... ..	43	Australian Notes Account ...	8,212,284
Government Printer ... ..	13,507	Other Trust Moneys ... ..	68,830
Invalid and Old Age Pensions...	1,006,287		
		Total ... ..	11,530,306



2. **Distribution.**—The amounts to credit of Trust Fund in the several States on 30th June, 1911, were as follows :—New South Wales, £490,297 ; Victoria, £10,669,688 ; Queensland, £175,902 ; South Australia, £92,138 ; Western Australia, £50,964 ; and Tasmania, £51,317.

3. **Australian Notes Account.**—After the passage of the Australian Notes Act, Australian notes began to appear in circulation in December, 1910. For the first half of the calendar year 1911, they circulated side by side with bank notes and Queensland Treasury notes. On 30th June, 1911, the notes issued and unredeemed amounted to £8,031,217. Against this there was a reserve in gold coin of £3,352,281 and other assets, of which the most important were investments in Government Stock and fixed deposits, totalling £4,642,500, and returning an annual income of £157,070. After 30th June, 1911, the penal clauses of the Notes Act came into operation and the banks and the Queensland Government began to withdraw their notes from active circulation. By the end of the year the process was virtually complete and the situation became normal.

The position, according to a Treasury return issued at the end of the March quarter of 1912, was as follows :—

**COMMONWEALTH NOTES ISSUED AND UNREDEEMED AT 27th MARCH, 1912.**

						£
£1	...	...	...	...	...	3,368,592
£5	...	...	...	...	...	3,235,360
£10	...	...	...	...	...	1,714,440
£20	...	...	...	...	...	382,780
£50	...	...	...	...	...	913,900
£100	...	...	...	...	...	433,400
						<hr/> 10,048,472

The amount of the gold reserve was £4,841,536, representing 48.18 per cent. of the liability. Out of this amount of Commonwealth notes the banks hold about £6,000,000, the balance being in active circulation.

The subject is also dealt with at some length in Section XXI., Sub-section 2, Banking.

## SECTION XX.

## STATE FINANCE.

## § 1. General.

1. **Functions of State Governments.**—In any comparison of the finances of the several States due recognition must be made of the actual functions assumed by the respective Governments, and also of the local conditions and requirements in each case. Direct comparisons of public expenditure are thus rendered difficult, owing to the fact that functions which in one State are assumed by the Central Government are in another State relegated to local governing bodies, and further by the fact that costly developmental work may, under certain conditions, be not only economically justifiable, but may be an essential of progress, whilst parsimonious expenditure may be a serious economic blunder. A large expenditure may, therefore, be an indication either of gross extravagance and bad economy on the one hand or healthy and vigorous progress and good economy on the other.

Similarly, as regards revenue, imposts which in some States are levied by the Central Government are in others considered as matters to be dealt with locally. Under these circumstances care is needed in instituting comparisons between the several States, and the particulars contained in this section should be read in connection with those contained in the section dealing with Local Government. It should also be noted that in many ways the budgets of the Australian Governments differ materially from those of most European countries, owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which, in the other countries referred to, are often left to private enterprise.

2. **Accounts of State Governments.**—The various financial transactions of the States are in each case concerned with one or other of three Funds—the “Consolidated Revenue Fund,” the “Trust Funds,” and the “Loan Funds.” All revenue collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an Annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. The hypothecation of the revenue from a specific tax to the payment for some special service is not practised in Australia, all statutory appropriations ranking on an equality as charges on the Consolidated Revenue Fund. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings bank funds, sinking funds, insurance companies’ deposits, etc. The Loan Funds are credited with all loan moneys raised by the State, and debited with the expenditure therefrom for public works or other purposes.

3. **Inter-relation of Commonwealth and State Finance.**—The principal alteration in State finance, brought about by Federation, has been that the States have transferred to the Commonwealth the large revenue received by the Customs and Postal Departments, and have been relieved of the expenditure connected with these and the Defence Departments, while, on the other hand, a new item of State revenue has been introduced, viz., the payment to the States of a Commonwealth subsidy. Provision for the taking over by the Commonwealth of certain of the public debts of the States is made

in section 105 of the Constitution, and a proposed law extending this provision to the whole of the State indebtedness, which passed both Houses of the Federal Legislature by the statutory majority, was submitted to a referendum at the election in April, 1910, and received the requisite endorsement by the electorate.

## § 2. State Consolidated Revenue Funds.

### (A) Receipts.

1. **Sources of Revenue.**—The principal sources of State revenue are:—

- (a) Taxation.
- (b) The public works and services controlled by the State Governments.
- (c) Sale of and rental from Crown lands.
- (d) The Commonwealth subsidy.
- (e) Miscellaneous sources, comprising fines, fees, interest, etc.

Of these sources that yielding the largest revenue for the States as a whole is the group of public works and services, the principal contributor being the Government railways and tramways. Next in magnitude comes the payment of the subsidy by the Commonwealth, followed in order by Taxation and Land Revenue.

2. **Amount Collected.**—The following table furnishes particulars of the total amount of consolidated revenue received by the several States during the ten years 1901-2 to 1910-11:—

STATE REVENUES, 1901-2 to 1910-11.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
1901-2 ...	11,007,356	6,997,792	3,535,062	2,477,431	3,354,123	826,163	28,197,927
1902-3 ...	11,296,069	6,954,619	3,526,465	2,530,568	3,630,238	734,663	28,672,622
1903-4 ...	11,248,328	7,319,949	3,595,440	2,568,100	3,550,016	857,668	29,139,501
1904-5 ...	11,336,918	7,515,742	3,595,399	2,798,849	3,615,340	852,681	29,714,929
1905-6 ...	12,283,082	7,811,475	3,853,523	2,866,308	3,558,939	900,657	31,273,984
1906-7 ...	13,392,435	8,345,534	4,307,912	3,252,705	3,401,354	970,843	33,670,783
1907-8 ...	13,960,763	8,314,480	4,488,298	3,722,090	3,376,641	1,005,274	34,867,646
1908-9 ...	13,646,126	8,247,684	4,769,172	3,591,260	3,268,993	934,405	34,457,640
1909-10	14,540,073	8,597,992	5,119,254	4,032,891	3,657,670	1,008,932	36,956,812
1910-11	13,839,139	9,204,503	5,320,008	4,181,472	3,850,439	970,092	37,365,653

The figures given in this table relate in each instance to the financial year ended 30th June, except in the case of Tasmania, where the figures shown for 1901-2, 1902-3, and 1903-4 relate respectively to the years ended 31st December, 1901, 1902, and 1903.

During the nine years from 30th June, 1901-2 to 30th June, 1910-11, the aggregate revenues of the States increased by no less a sum than £9,167,726, or a little over 32 per cent. Increases were in evidence in all the States, the largest increase being that of £2,831,783 in New South Wales.

It will be noticed that in all the States, except Queensland, the revenue for 1908-9 was lower than that of the preceding year, largely owing to the fact that the revenue for 1907-8 was swelled by the payment of Customs duties in anticipation of, or in consequence of, the new tariff imposed on 8th August, 1907.

3. **Revenue per Head.**—Details concerning the revenue per head of population, collected in the several States of the Commonwealth during the ten years 1901-2 to 1910-11, are furnished in the table given hereunder. It will be seen that throughout the period Western Australia has collected by far the largest amount per head, and that Tasmania has collected the least.

## STATE REVENUE PER HEAD OF POPULATION, 1901-2 to 1910-11.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	8 0 1	5 15 8	6 19 6	6 16 1	17 6 6	4 14 3	7 7 5
1902-3 ...	8 1 2	5 15 1	6 17 8	7 0 0	17 2 6	4 1 11	7 8 0
1903-4 ...	7 17 11	6 1 6	6 18 11	7 2 2	15 15 11	4 13 9	7 8 10
1904-5 ...	7 15 9	6 4 8	6 17 0	7 14 0	15 2 0	4 15 1	7 9 6
1905-6 ...	8 5 1	6 9 1	7 5 0	7 16 4	14 4 7	4 16 8	7 15 1
1906-7 ...	8 16 0	6 16 10	7 19 10	8 15 7	13 6 7	5 4 8	8 4 7
1907-8 ...	8 18 10	6 14 11	8 4 6	9 17 3	13 5 9	5 6 0	8 7 7
1908-9 ...	8 12 4	6 11 11	8 11 3	9 4 5	12 11 9	4 17 6	8 2 10
1909-10 ...	9 0 2	6 14 8	8 17 2	10 3 6	13 15 4	5 4 6	8 10 11
1910-11 ...	8 8 5	7 1 5	8 17 8	10 3 11	13 18 2	5 0 1	8 8 11

In all the States, except Western Australia, the four years up to 1909-10 witnessed a marked increase in the State revenue collections per head, the most noticeable advances being £2 7s. 2d. in the case of South Australia and £1 12s. 2d. in that of Queensland. The Western Australian decline was continuous until 1908-9, though recovering in 1909-10, and for 1910-11 the revenue per head in that State exceeded the Commonwealth average by more than 60 per cent. Three States, viz., Western Australia, South Australia, and Queensland, exceeded the Commonwealth average for 1910-11, while the other three States fell short of it.

4. **Details for 1910-11.**—Classifying the revenue of the several States in the manner indicated in § 2 (A) 1 above, particulars for the year 1910-11 are as follows:—

## DETAILS OF STATE REVENUE, 1910-11.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	All States.
	£	£	£	£	£	£	£
Taxation ...	1,027,519	1,344,573	667,196	545,986	325,246	284,965	4,195,485
Public Works & Services ...	8,713,375	5,304,562	2,816,075	2,471,603	2,319,079	327,071	21,951,765
Land ...	1,838,917	352,918	805,106	473,791	393,313	98,026	3,962,071
Commonwealth subsidy ...	1,942,245	1,617,572	688,063	510,373	569,577	228,118	5,555,948
Miscellaneous ...	317,063	584,878	343,568	179,719	243,224	31,912	1,700,384
Total ...	13,839,139	9,204,503	5,320,008	4,181,472	3,850,439	970,092	37,365,653

It will be noted that the amounts returned under the heading "Commonwealth subsidy" do not quite agree with those given in the chapter on Commonwealth Finance, page 809. This arises from the fact that the State figures shew the amount for which credit was taken by the State during the financial year 1910-11, whilst the Commonwealth figures shew the amounts paid to State Treasurers on account of that financial year.

5. **Revenue per Head, 1910-11.**—Particulars concerning the revenue per head of population in each State derived from the several sources enumerated in the preceding paragraph are given hereunder:—

## STATE REVENUE PER HEAD, 1910-11.

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation ...	0 12 6	1 0 8	1 2 3	1 6 8	1 3 6	1 9 5	0 19 0
Public Works & Services ...	5 6 0	4 1 6	4 14 0	6 0 6	8 7 6	1 13 9	4 19 2
Land ...	1 2 4	0 5 4	1 6 11	1 3 1	1 8 4	0 10 1	0 17 11
Commonwealth subsidy ...	1 3 8	1 4 11	1 3 0	1 4 11	2 1 3	1 3 7	1 5 1
Miscellaneous ...	0 3 11	0 9 0	0 11 6	0 8 9	0 17 7	0 3 3	0 7 9
Total ...	8 8 5	7 1 5	8 17 8	10 3 11	13 18 2	5 0 1	8 8 11

The magnitude of the revenue per head from public works and services in the case of Western Australia is mainly due to the fact that the number of miles of railway in that State is large compared with the population, and that the revenue-earning power of the railways is also high.

**6. Relative Importance of Sources of Revenue.**—The following table furnishes an indication of the relative importance of the different sources of revenue in the several States, the figures given being the percentage which each item of revenue bore to the total for the State for the year 1910-11:—

PERCENTAGE OF TOTAL STATE REVENUE, 1910-11.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Taxation ... ..	7.42	15.83	12.54	13.05	8.45	29.38	11.23
Public Works and Services ...	62.96	56.41	52.93	59.11	60.23	33.72	58.75
Land ... ..	13.29	3.83	15.14	11.33	10.21	10.10	10.60
Commonwealth Subsidy ...	14.04	17.57	12.93	12.21	14.79	23.52	14.87
Miscellaneous ... ..	2.29	6.36	6.46	4.30	6.32	3.28	4.55
Total ... ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00

One of the most noticeable features of the figures here given is the comparatively low percentage for "public works and services" and the high percentage for "taxation" in the case of Tasmania. In New South Wales and Queensland land revenue is an important item, while in Queensland the revenue from "public works and services" falls considerably below the Commonwealth average. There has been in all States a fall in the percentage derived from the Commonwealth in 1910-11, due to the new system of allocation.

**7. State Taxation.**—(a) *Details, 1910-11.* Prior to the inauguration of Federation the principal source of revenue from taxation was the imposition of duties of Customs and Excise. At the present time the most productive forms of State taxation are the income tax, which is now imposed in all the States (Western Australia, the last of the States to adopt this method of taxation, having passed the necessary legislation during the Parliamentary session of 1907), and probate and succession duties. For 1910-11 stamp duties occupied third place. In addition to these a State land tax is now collected in all the States except Queensland, and license fees of various kinds are collected in all the States, while a dividend tax is collected in Western Australia, and an "ability" tax<sup>1</sup> in Tasmania. The total revenue from taxation collected by the States during the year 1910-11 was £4,195,485, details of which are set forth in the table given hereunder:—

STATE REVENUE FROM TAXATION, 1910-11.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	All States
	£	£	£	£	£	£	£
Probate and succession duties	357,750	433,104	71,637	109,698	23,124	27,459	1,022,772
Other stamp duties ... ..	268,091	275,314	174,051	109,274	79,404	61,118	967,252
Land tax ... ..	7,438	210,640	...	135,614	37,871	64,332	456,495
Income tax ... ..	...	...	...	...	49,579	...	...
Dividend tax ... ..	269,142	395,998	348,513	168,707	84,496	115,836	1,432,271
Ability tax ... ..	...	...	...	...	...	...	...
Licenses ... ..	125,098	21,982	57,600	22,693	43,033	13,685	284,091
Other taxation ... ..	...	7,535	15,395	...	7,739	1,935	32,604
Total ... ..	1,027,519	1,344,573	667,196	545,986	325,246	284,965	4,195,485

1. The "ability" tax is based upon the annual value of the house occupied by the taxpayer, or upon the amount payable by him for board and lodging.

The most productive forms of taxation in the several States during the year 1910-11 were as follows:—New South Wales and Victoria, probate and succession duties; Queensland and South Australia, income tax; Western Australia, dividend tax; and Tasmania, land tax.

(b) *Summary, 1901-2 to 1910-11.* The total amount raised by means of taxation by the several State Governments during the ten years 1901-2 to 1910-11 is given in the following table:—

#### STATE REVENUE FROM TAXATION, 1901-2 to 1910-11.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1901-2	1,108,770	748,216	276,771	267,791	173,582	111,515	2,686,645
1902-3	1,108,781	878,591	415,688	398,941	221,247	105,402	3,128,650
1903-4	1,100,193	938,147	475,184	353,432	235,114	150,091	3,252,161
1904-5	1,114,408	897,870	454,574	442,030	221,738	216,953	3,347,573
1905-6	1,297,776	990,735	494,165	369,756	260,609	248,799	3,661,840
1906-7	1,381,305	1,110,411	540,737	411,867	266,152	276,450	3,986,922
1907-8	1,077,534	977,620	525,540	477,637	277,463	265,656	3,601,450
1908-9	907,249	1,072,228	535,194	450,250	296,599	250,835	3,512,355
1909-10	1,223,521	1,088,353	584,997	481,003	336,396	303,390	4,017,660
1910-11	1,027,519	1,344,573	667,196	545,986	325,246	284,965	4,195,485

During the nine years between 30th June, 1901-2, and 30th June, 1910-11, the aggregate State revenue from taxation increased by nearly 60 per cent., the increase varying considerably in the several States. Thus while New South Wales shewed a decrease of 8 per cent., and Victoria an increase of 80 per cent., the Queensland revenue advanced by 140 per cent., and that of Tasmania by 156 per cent. The total increase in State taxation for the year amounted to £177,825.

The revenue from State taxation per head of population, collected in the several States during each of the years 1901-2 to 1910-11, was as follows:—

#### STATE TAXATION PER HEAD, 1901-2 to 1910-11.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2	0 16 1	0 12 4	0 10 11	0 14 8	0 17 11	0 13 0	0 14 1
1902-3	0 15 10	0 14 6	0 16 3	1 2 0	1 0 10	0 11 9	0 16 2
1903-4	0 15 5	0 15 7	0 18 4	0 19 7	1 0 10	0 16 5	0 16 7
1904-5	0 15 4	0 14 11	0 17 4	1 4 4	0 18 6	1 3 5	0 16 10
1905-6	0 17 5	0 16 4	0 18 7	1 0 2	1 0 10	1 6 8	0 18 2
1906-7	0 18 2	0 18 2	1 0 1	1 2 3	1 0 10	1 9 10	0 19 6
1907-8	0 13 9	0 15 10	0 19 3	1 5 3	1 1 10	1 8 0	0 17 3
1908-9	0 11 6	0 17 2	0 19 2	1 3 1	1 2 10	1 6 2	0 16 7
1909-10	0 15 2	0 17 0	1 0 3	1 4 3	1 5 4	1 11 5	0 18 7
1910-11	0 12 6	1 0 8	1 2 3	1 6 8	1 3 6	1 9 5	0 19 0

Taking the States as a whole the State taxation increased by four shillings and elevenpence per head during the nine years from 1901-2 to 1910-11, the most marked increase being that of sixteen shillings and fivepence per head in the case of Tasmania. In Queensland the increase amounted to eleven shillings and fourpence, in South Australia to twelve shillings, in Western Australia to five shillings and sevenpence, in Victoria to eight shillings and fourpence, while in New South Wales a decline of three shillings and sevenpence took place, owing in large measure to the reductions made in that State in the imposition of income tax and stamp duties and the loss of revenue consequent on the transfer of land tax receipts to local bodies. State taxation per head is at present highest in Tasmania and lowest in New South Wales.

**8. Commonwealth and State Taxation.**—For the purpose of obtaining an accurate view of the extent of taxation imposed on the people of the Commonwealth by the central governing authorities it is necessary to add together the Commonwealth and State collections. This has been done in the table given hereunder, which contains particulars concerning the total taxation for each of the years 1906-7 to 1910-11, as well as the amount per head of population:—

**COMMONWEALTH AND STATE TAXATION, 1906-7 to 1910-11.**

Particulars.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Commonwealth taxation ...	9,648,556	11,645,352	10,844,067	11,593,164	14,350,788
State taxation ...	3,986,922	3,601,450	3,512,355	4,017,660	4,195,485
 Total ...	 13,635,478	 15,246,802	 14,356,422	 15,610,824	 18,546,273
 Taxation per head ...	 £3 6 2	 £3 12 8	 £3 7 2	 £3 11 2	 £4 3 10

Whilst the Commonwealth taxation increased during the period by £4,702,232, the State taxation advanced by £208,563, the aggregate increase being £4,910,795. The amount has, however, fluctuated somewhat during the period, and has ranged between a minimum of £3 6s. 2d. per head in 1906-7 and a maximum of £4 3s. 10d. per head in 1910-11. The large increase in Commonwealth taxation in 1910-11 is mainly due to the appearance for the first time of the Federal Land Tax.

**9. Public Works and Services.**—A very large proportion of the revenue of all the States of the Commonwealth is made up of the receipts from the various public works and services under the control of the several Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all the States. For the year 1910-11 the aggregate revenue from this source totalled £21,951,765, or nearly 60 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1910-11 are as follows:—

**STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1910-11.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and Tramways ...	7,412,127	4,887,560	2,706,888	2,033,781	1,858,914	276,942	19,176,212
Harbour Services ...	475,868	112,227	33,709	94,424	133,692	...	849,920
Public Batteries ...	...	406	...	...	67,143	...	67,549
Water Supply and Sewerage ...	592,040	*136,752	...	156,081	156,559	...	1,041,382
Other Public Services ...	233,340	167,617	75,478	187,367	102,771	50,129	816,702
 Total ...	 8,713,375	 5,304,562	 2,816,075	 2,471,603	 2,319,079	 327,071	 21,951,765

\* Water Supply only.

**10. Land Revenue.**—The revenue derived by the States from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of their respective Consolidated Revenue Funds, and has been applied to meet ordinary current expenses. Where the rentals received are for lands held for pastoral or for residential purposes, such application of the revenue appears perfectly justifiable. On the other hand, where the rentals are those of mineral and timber lands, and in all cases of sales of lands, such a proceeding is essentially a disposal of capital in order to defray current expenses. As a matter of financial procedure such a course is open to criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1910-11:—

## STATE LAND REVENUE, 1910-11.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Sales ...	1,028,531	219,789	217,099	340,731	253,961	60,894	2,121,005
Rentals ...	810,386	133,129	588,007	133,060	139,352	37,132	1,841,066
Total ...	1,838,917	352,918	805,106	473,791	393,313	98,026	3,962,071

11. **Commonwealth Subsidy.**—The payments to the States of Commonwealth subsidy represent in each instance a considerable proportion of the State's revenue, and for the year 1910-11 aggregated £5,555,948. This represents a great decline from the amounts of previous years, owing to the new system of allotting the subsidy. The percentage which the subsidy received by each State for 1910-11 was of the total revenue of that State is shewn in the following table:—

## COMMONWEALTH SUBSIDY PAID TO STATES DURING 1910-11.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Commonwealth subsidy ...	1,942,245	1,617,572	688,063	510,373	569,577	228,118	5,555,948
Total revenue ...	13,839,139	9,204,503	5,320,008	4,181,472	3,850,439	970,092	37,365,653
Percentage of subsidy on revenue ...	%	%	%	%	%	%	%
	14.04	17.57	12.93	12.21	14.79	23.52	14.87

The amount of subsidy here shewn is that for which the several States took credit during the year 1910-11. (See also page 814.)

12. **Miscellaneous Items of Revenue.**—In addition to the foregoing sources of revenue there are in each State several miscellaneous ones, including such items as interest, fines, fees, etc., which for the year 1910-11 aggregated £1,700,384.

## (R) Disbursements.

1. **Heads of Expenditure.**—The principal heads of State expenditure from Consolidated Revenue Funds are:—

- (a) Interest and sinking funds in connection with public debt.
- (b) Working expenses of railways and tramways.
- (c) Justice.
- (d) Police.
- (e) Penal establishments.
- (f) Education.
- (g) Medical and charitable.
- (h) All other expenditure.

Of these items that of working expenses of railways and tramways was the most important, and for the year 1910-11 represented about 33 per cent. of the aggregate expenditure from the Consolidated Revenue Fund. Next in order for that year was the item of interest and sinking fund in connection with the public debt, then education, medical and charitable, police, other public works, and lands and surveys in the order named.



2. **Total Expenditure.**—The total expenditure from Consolidated Revenue Funds in the several States during each of the years 1901-2 to 1910-11 is furnished in the table given hereunder:—

**STATE EXPENDITURE FROM CONSOLIDATED REVENUE FUNDS, 1901-2 to 1910-11.**

Year.	N.S. Wales.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1901-2 ...	11,020,105	7,398,832	3,967,001	2,823,578	3,151,427	870,442	29,231,385
1902-3 ...	11,467,235	6,759,960	3,717,806	2,641,789	3,521,763	850,685	28,959,238
1903-4 ...	11,319,888	7,339,608	3,607,864	2,707,254	3,698,312	879,356	29,552,282
1904-5 ...	11,195,075	7,343,742	3,581,403	2,860,894	3,745,224	840,184	29,566,522
1905-6 ...	11,386,864	7,261,475	3,725,712	3,004,974	3,632,318	853,147	29,864,490
1906-7 ...	11,876,657	7,679,143	3,911,797	3,394,999	3,490,182	913,762	31,266,540
1907-8 ...	12,095,593	7,862,246	4,373,097	3,862,336	3,379,006	929,885	32,502,163
1908-9 ...	12,893,662	8,240,177	4,759,231	3,760,005	3,370,530	960,237	33,983,842
1909-10 ...	13,038,150	8,579,980	5,113,578	4,196,493	3,447,732	997,321	35,373,254
1910-11 ...	13,807,538	9,194,157	5,314,737	4,181,472	3,734,448	1,016,963	37,249,315

As in the case of the table previously given for revenue, the above figures relate to the year ended 30th June, except in the cases of 1901-2, 1902-3, 1903-4, which contain Tasmanian figures for the years ended 31st December, 1901, 1902, and 1903 respectively.

3. **Expenditure per Head.**—Owing to the varying conditions of the several States and the extent to which the different functions of Government are distributed therein between central and local governing authorities, the expenditure per head from Consolidated Revenue Funds differs materially in the several States, being highest in the case of Western Australia and lowest in that of Tasmania. Three of the States, viz., Western Australia, South Australia and Queensland, are above the Commonwealth average per head, and the other three States below. The expenditure per head of population for each State for the years 1901-2 to 1910-11 is as follows:—

**STATE EXPENDITURE PER HEAD, 1901-2 to 1910-11.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	8 0 3	6 2 4	7 16 7	7 15 2	16 5 7	4 19 4	7 12 10
1902-3 ...	8 3 7	5 11 11	7 5 2	7 6 2	16 12 3	4 14 10	7 9 6
1903-4 ...	7 18 10	6 1 10	6 19 4	7 9 11	16 9 1	4 16 2	7 10 11
1904-5 ...	7 13 10	6 1 10	6 16 5	7 17 4	15 12 10	4 10 9	7 8 9
1905-6 ...	7 13 1	6 0 0	7 0 2	8 3 11	14 10 5	4 11 6	7 8 1
1906-7 ...	7 16 1	6 5 11	7 5 2	9 3 4	13 13 7	4 18 6	7 12 10
1907-8 ...	7 14 11	6 7 6	8 0 3	10 4 8	13 5 6	4 18 1	7 16 2
1908-9 ...	8 2 10	6 11 9	8 10 10	9 13 1	12 19 7	5 0 2	8 0 7
1909-10 ...	8 1 7	6 14 4	8 17 0	10 11 9	12 19 6	5 3 3	8 3 7
1910-11 ...	8 8 0	7 1 3	8 17 5	10 3 11	13 9 9	5 4 11	8 8 4

In all the States with the exception of South Australia increases in the expenditure per head took place during the year 1910-11, ranging from 10s. 3d. per head in the case of Western Australia to 5d. per head in that of Queensland. In South Australia a decrease of 7s. 10d. per head was experienced.

4. **Details of Expenditure for 1910-11.**—The following table furnishes for the year 1910-11 particulars as to the expenditure of the several States under each of the principal heads:—

## DETAILS OF STATE EXPENDITURE, 1910-11.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Public debt (int., sink'g fund, &c.)	3,659,918	2,219,096	1,670,772	1,343,355	1,046,236	435,335	10,374,712
Rlways. & tramways (work'g exps.)	4,814,991	3,031,431	1,560,994	1,277,182	1,237,620	215,530	12,137,748
Justice ... ..	268,528	181,497	81,573	32,986	57,543	11,513	633,640
Police ... ..	479,684	320,663	222,788	91,615	115,234	40,331	1,270,315
Penal establishments ... ..	78,997	50,397	25,036	17,040	23,986	5,466	200,922
Education ... ..	1,210,135	1,009,048	393,747	236,249	219,304	90,724	3,159,207
Medical and charitable ... ..	602,834	492,113	260,735	137,483	162,262	53,352	1,708,779
All other expenditure ... ..	2,692,451	1,889,912	1,099,092	1,045,562	872,263	164,712	7,763,092
<b>Total</b> ... ..	<b>13,807,538</b>	<b>9,194,157</b>	<b>5,314,737</b>	<b>4,181,472</b>	<b>3,734,448</b>	<b>1,016,963</b>	<b>37,249,315</b>

5. **Expenditure per Head, 1910-11.**—The expenditure per head of population of the several States for the year 1910-11, under each of the principal items, is given hereunder :—

## STATE EXPENDITURE PER HEAD, 1910-11.

Particulars	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public debt. (interest, sink- ing fund, &c.) ... ..	2 4 6	1 14 1	2 15 1	3 5 7	3 15 7	2 4 11	2 6 11
Railways and tramways (working expenses) ... ..	2 18 7	2 6 7	2 12 5	3 2 3	4 9 4	1 2 3	2 14 10
Justice ... ..	0 3 3	0 2 9	0 2 9	0 1 7	0 4 2	0 1 2	0 2 10
Police ... ..	0 5 10	0 4 11	0 7 5	0 4 6	0 8 4	0 4 2	0 5 9
Penal establishments ... ..	0 1 0	0 0 9	0 0 10	0 0 10	0 1 9	0 0 7	0 0 11
Education ... ..	0 14 9	0 15 6	0 13 2	0 11 6	0 15 10	0 9 4	0 14 3
Medical and charitable ... ..	0 7 4	0 7 7	0 8 8	0 6 8	0 11 9	0 5 6	0 7 9
All other expenditure ... ..	1 12 9	1 9 1	1 17 1	2 11 0	3 3 0	0 17 0	1 15 1
<b>Total</b> ... ..	<b>8 8 0</b>	<b>7 1 3</b>	<b>8 17 5</b>	<b>10 3 11</b>	<b>13 9 9</b>	<b>5 4 11</b>	<b>8 8 4</b>

In three of the States, viz., Western Australia, South Australia, and Queensland, the average State expenditure per head exceeded that for the Commonwealth as a whole, falling short of it in the other three States.

6. **Relative Importance.**—The relative importance of the items of expenditure enumerated above varies considerably in the several States. This will readily be seen from the following table, giving for each State the percentage of the expenditure under the various items, on the total expenditure for the State :—

## PERCENTAGE ON TOTAL STATE EXPENDITURE, 1910-11.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Public debt (interest, sink- ing fund, &c.) ... ..	26.51	24.14	31.25	32.13	28.02	42.81	27.85
Railways and tramways (working expenses) ... ..	34.87	32.97	29.37	30.54	33.14	21.19	32.59
Justice ... ..	1.95	1.97	1.53	0.79	1.54	1.13	1.70
Police ... ..	3.47	3.49	4.19	2.19	3.09	3.97	3.41
Penal establishments ... ..	0.57	0.55	0.47	0.41	0.64	0.54	0.54
Education ... ..	8.76	10.97	7.41	5.65	5.87	8.92	8.48
Medical and charitable ... ..	4.37	5.35	4.91	3.29	4.34	5.25	4.59
All other expenditure ... ..	19.50	20.56	20.87	25.00	23.36	16.19	20.84
<b>Total</b> ... ..	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Taken together, the interest and sinking fund on the public debt, and the working expenses of the railways and tramways, represented for the year 1910-11 about 60 per cent. of the aggregate State expenditure.

(c) **Balances.**

1. **Position on 30th June, 1911.**—On various occasions in each of the States the revenue collected for a financial year has failed to provide the funds requisite for defraying the expenditure incurred during that year, the consequence being a deficit which is usually liquidated either by cash obtained from trust funds, or by the issue of Treasury bills. In some of the States a number of such deficits has occurred, interspersed with occasional surpluses, the result being an accumulating overdraft, which in certain instances assumed very large proportions. Thus during the period of financial stress resultant upon the crisis of 1893 and the drought conditions of succeeding years, the accumulated overdrafts of several of the States grew very rapidly. The very favourable financial conditions of recent years have enabled the various Treasurers to considerably reduce such liabilities from time to time, and at 30th June, 1911, the position of the balances of the several Consolidated Revenue Funds was as set forth in the table hereunder:—

**STATE CONSOLIDATED REVENUE FUND BALANCES, 30th JUNE, 1911.**

State.	Cash Credit Balances.	Debit Balance.		Net Result.
		Cash Overdraft.	Overdraft liquidated by Treasury Bills	
	£	£	£	£
New South Wales ... ..	401,505	...	414,516	Dr. 13,011
Victoria ... ..	...	304,629	...	Dr. 304,629
Queensland ... ..	5,271	...	...	Cr. 5,271
South Australia ... ..	217,061	...	...	Cr. 217,061
Western Australia ... ..	13,299	...	...	Cr. 13,299
Tasmania ... ..	...	28,468	69,610	Dr. 98,078
Total ... ..	637,136	333,097	484,126	Dr. 180,087

(D) **Principal State Taxes.**(a) **Probate and Succession Duties.**

1. **General.**—Probate duties have been levied for a considerable time in all the States of the Commonwealth. From the provisions of the several State Acts governing the payment of duty which are outlined hereunder, it will be seen that both the ordinary rates and those which apply to special beneficiaries differ widely in several cases. In the following table the amount under which the estates of deceased persons were sworn, is shewn for the years 1906 to 1910:—

**VALUE OF ESTATES OF DECEASED PERSONS, 1906 to 1910.**

State.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£
New South Wales ... ..	7,529,437	7,563,499	7,838,572	11,142,068	8,834,934
Victoria ... ..	6,424,738	6,860,143	7,128,085	6,480,376	7,430,949
Queensland ... ..	1,794,742	1,670,184	1,376,255	1,508,883	1,652,691
South Australia ... ..	2,041,280	1,923,954	2,105,351	1,939,509	2,422,519
Western Australia ... ..	544,245	1,154,126	955,995	939,318	868,638
Tasmania ... ..	862,222	841,227	1,023,629	722,011	797,439
Commonwealth ... ..	19,196,664	20,013,133	20,427,887	22,732,165	22,007,170

The duty collected in the several States for the financial years 1906-7 to 1910-11 is as follows:—

**AMOUNT OF PROBATE AND SUCCESSION DUTIES COLLECTED, 1906-7 to 1910-11.**

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
New South Wales ...	289,901	310,704	301,681	650,202	357,750
Victoria ...	401,631	304,830	418,418	358,173	433,104
Queensland* ...	71,399	42,788	57,012	61,193	71,637
South Australia ...	60,204	70,227	86,344	84,651	109,698
Western Australia ...	34,309	41,688	20,132	57,416	23,124
Tasmania ...	26,602*	32,087	28,641	44,267	27,459
Commonwealth ...	884,046	802,324	912,228	1,255,902	1,022,772

\* Approximate.

**2. New South Wales.**—(i.) *Legislation.* The Acts relative to probate and succession duties at present in force in New South Wales are, in chronological order, as follows:—

- (a) Wills, Probate and Administration Act 1898.
- (b) Stamp Duties Act 1898, and Amendment of, 1904.
- (c) Probate Duties (Amendment) Act 1899.
- (d) Administration (Validating) Act 1900.
- (e) Companies (Death Duties) Act 1901.
- (f) Administration Amending Act 1906.

The first-named Act, assented to on 27th July, 1898, repealed, amongst others, the Probate Act of 1890 (two sections excepted), and also the Probate Amendment Act of the same year. On the same day, 27th July, assent was also given to the Stamp Duties Act, the rates of duty contained in which were in force until the passing of the Probate Duties (Amendment) Act on 22nd December, 1899, when its schedule was repealed and a new rate of duty was imposed.

The Administration (Validating) Act of 1900 was passed in order to validate certain orders of the Supreme Court giving power or leave to sell, mortgage or lease, the real estate of deceased persons.

The Companies (Death Duties) Act of 1901 relates to the registration of any company incorporated according to the laws of some country other than New South Wales carrying on the business (a) of mining for any minerals in New South Wales, or (b) of pastoral or agricultural production or timber-getting in New South Wales, and to the imposition of duties on the death of shareholders of those companies.

(ii.) *Rates of Duty.* In lieu of the duties payable on probate and letters of administration as provided for by the Stamp Duties Act of 1898, the following rates are now payable on the total value of the estate of a deceased person after the deduction of all debts, as enacted by the Amending Act of 1899, viz.—Up to £1000, nil; above £1000 and up to £5000, 2 per cent.; then up to £6000, 3 per cent.; then increasing  $\frac{1}{2}$  per cent. for each £1000 up to £10,000, for each £2000 up to £40,000, and for each £4000 up to £100,000, the last group, £96,000 to £100,000, being subject to  $9\frac{1}{2}$  per cent. Above £100,000 the duty is 10 per cent. Property left by the deceased to his widow or children is subject to half the foregoing rates, if the total value of the estate, after the deduction of all debts, does not exceed £50,000.

**3. Victoria.**—(i.) *Legislation.* The Acts contained in the subjoined list regulate the probate and succession duties of Victoria:—

- (a) No. 1060, Administration and Probate Act 1890, with its amendments of 1891, 1892, 1898, 1903, and 1907.
- (b) No. 1419, Intestate Estates Act 1896.
- (c) No. 1827, Probate Charges Act 1903, and its amendment No. 1970 of 1905.
- (d) No. 1862, Administration and Probate Duties Act 1903, with its amendments of 1904, 1905, 1906, 1907, 1908, and 1909.

The principal Act, the Administration and Probate Act 1890, was assented to on 10th July, 1890, and came into force on 1st August of the same year. It repealed Acts Nos. 338, 403, 427, 523, 900, 928, 1035 and 1053, and enacted a scale of duties which was enforced until 1st January, 1903, when the Administration and Probate Act of 1903 came into force.

(ii.) *Rates of Duty.* The last-mentioned Act provides for the following scale of duties on the estate, real and personal, of deceased persons, after the deduction of all debts, viz.:—Less than £200, nil; above £200 and up to £300,  $1\frac{1}{2}$  per cent.; then increasing  $\frac{1}{2}$  per cent. for each £100 up to £600; then, increasing  $\frac{1}{3}$  per cent. for each £200 up to £1000; above £1000 and up to £1500,  $\frac{1}{4}$  per cent.; then increasing  $\frac{1}{4}$  per cent. for each £500 up to £6000; then increasing  $\frac{1}{5}$  per cent. for each £1000 up to £19,000; with the exception of the two stages £10,000 to £11,000 and £14,000 to £15,000, which involve an increase of  $\frac{2}{3}$  per cent. and whose rates are respectively  $7\frac{1}{3}$  and  $8\frac{1}{3}$  per cent.; over £19,000 and up to £20,000,  $9\frac{1}{2}$  per cent.; and over £20,000, 10 per cent. is charged.

The rates of duty as shewn above also apply to all settlements of property, both real and personal, where the person taking the property is a brother or sister, or descendant of a brother or sister, or by any other person in any other degree of collateral consanguinity to the settlor, but duty at the rate of 10 per cent. is payable on the value of property taken by a stranger in blood to the settlor or donor.

(iii.) *Special Rates.* Property left by the deceased to his widow, children or grandchildren, is subject to the following rates, except that in cases where the total value of the estate after payment of all debts does not exceed £2000 half these rates only are charged:—Up to £500, nil; over £500 and up to £1000, 1 per cent.; over £1000 and up to £2000, 3 per cent.; then increasing by  $\frac{1}{3}$  per cent. for each £1000 up to £5000, and by  $\frac{1}{2}$  per cent. for each £1000 up to £8000; over £8000 and up to £10,000, 5 per cent.; increasing thence by  $\frac{1}{3}$  per cent. for each £2000 up to £24,000, for each £4000 up to £80,000, and for each £5000 up to £100,000, the last group £95,000 to £100,000 being subject to  $9\frac{1}{2}$  per cent.; over £100,000, the amount payable is 10 per cent.

4. *Queensland.*—(i.) *Legislation.* The collection of probate and succession duties in Queensland is governed by the following Acts:—

- (a) The Succession and Probate Duties Act 1892.
- (b) The Succession Act Amendment Act 1895.
- (c) The Succession and Probate Duties Amendment Act 1895.
- (d) The Succession and Probate Duties Act 1904.
- (e) The Succession Act 1906.
- (f) The Succession and Probate Amendment Act 1906.

The principal Act, the Succession and Probate Duties Act of 1892, which was assented to on 4th October, 1892, and taken as coming into force on 7th September previous, repealed the Succession Duties Act of 1886, and enacted a scale of duties which is still levied.

(ii.) *Rates of Succession Duty.* If the whole succession or successions derived from the same predecessor, and passing upon death to any person, amount in money or principal value to less than £200, no duty is payable; where the value is £200 and less than £1000, 2 per cent. is due; £1000 and less than £2500, 3 per cent.; £2500 and less than £5000, 4 per cent.; £5000 and less than £10,000, 6 per cent.; £10,000 and less than £20,000, 8 per cent.; and when the value is £20,000 or upwards, 10 per cent. is charged.

(iii.) *Special Rates.* Duty at one-half of the above rates is payable when the successor is the wife or husband, or the lineal issue of the predecessor; and at double the rates if the successor is a stranger in blood to the settlor.

(iv.) *Probate and Administration.* In addition to the foregoing succession duties a probate duty of 1 per cent. is payable on all estates having a net value of £300 or over. When the net value of the property of a deceased person does not amount to £300 it is exempt from duty.

(v.) *Exemptions.* Bequests for educational and charitable purposes in Queensland are exempt from taxation.

**5. South Australia.**—(i.) *Legislation.* Under the four Acts given hereunder the probate and succession duties are collected in South Australia:—

- (a) No. 537, The Administration and Probate Act 1891.
- (b) No. 567, The Succession Duties Act 1893.
- (c) No. 819, The Administration and Probate Act 1903.
- (d) No. 854, The Administration and Probate Amendment Act 1904.

On 25th October, 1893, the Succession Duties Act was assented to, and by it the Probate and Succession Duty Act of 1876, and its two amendments, Nos. 225 of 1881 and 361 of 1885, were repealed.

(ii.) *Rates of Duty.* On the property derived by any beneficiary the duties are assessed on the net value, and the following scale applies where the person taking the property is the widow, widower, descendant or ancestor of the deceased; and likewise where the property is given or accrues to any of the above-mentioned persons under a settlement or deed of gift:—Under £500, *nil*; over £500 and up to £700,  $1\frac{1}{2}$  per cent.; over £700 and up to £1000, 2 per cent.; over £1000 and up to £2000, 3 per cent.; over £2000 and up to £3000,  $3\frac{1}{2}$  per cent.; increasing thence by  $\frac{1}{2}$  per cent. for each £2000 up to £7000; over £7000 and up to £10,000, 5 per cent.; increasing thence by  $\frac{1}{2}$  per cent. for each £5000 up to £20,000, for each £10,000 up to £40,000, for each £20,000 up to £100,000, and for each £50,000 up to £200,000, the duty from £150,000 to £200,000 being  $9\frac{1}{2}$  per cent.; above £200,000 the duty is 10 per cent.

Where the person taking the property is a brother, sister, descendant of a brother or sister, or any person in any other degree of collateral consanguinity to the deceased person, or where the property is given or accrues to any of the aforesaid persons under a settlement or deed of gift, the duty is reckoned on the net present value of such property, and is payable at the rates shewn hereunder:—Under £200, 1 per cent.; up to £300,  $1\frac{1}{2}$  per cent.; up to £400, 2 per cent.; up to £700, 3 per cent.; up to £1000,  $3\frac{1}{2}$  per cent.; up to £2000, 4 per cent.; thence increasing 1 per cent. up to each of the following amounts:—£3000, £5000, £10,000, £15,000, and £20,000; above £20,000 10 per cent. is payable.

If the person taking the property, either by will or under a settlement or deed of gift, is a stranger in blood to the deceased or the settlor or donor, as the case may be, duty is charged at the rate of 10 per cent. on the net present value of the property.

(iii.) *Special Rates.* Duty at one-half the rates shewn above is levied when the person who takes is the child under twenty-one years of age or the widow of the deceased or the settlor or donor, provided that the net value of the whole estate be under £2000.

**6. Western Australia.**—(i.) *Legislation.* The only Acts relating to probate and succession duties at present in force in Western Australia are the Administration Act of 1903, which was assented to on 31st December, 1903, and the Administration Act Amendment Act 1909. The former repealed a number of Acts, including the Real Estates Administration Act 1893 and the Duties on Deceased Persons' Estates Act 1895. The latter levied the following scale of duties:—

(ii.) *Rates of Duty.* When the total value of the estate, real or personal, of a deceased person, or of the property given or accruing to any person under a settlement or deed of gift, does not, after the deduction of all debts, exceed £500, duty is payable at

the rate of 1 per cent.; where the value exceeds £500, but does not exceed £1000, 2 per cent. is charged; £1000 and under £2500, 3 per cent.; £2500 and under £4500, 4 per cent.; £4500 and under £6000, 5 per cent.; £6000 and under £7000, 6 per cent.; £7000 and under £8000, 6½ per cent.; £8000 and under £9000, 6¾ per cent.; £9000 and under £10,000, 6⅝ per cent.; £10,000 and under £11,000, 7¼ per cent.; £11,000 and under £12,000, 7½ per cent.; £12,000 and under £13,000, 7¾ per cent.; £13,000 and under £14,000, 7⅞ per cent.; £14,000 and under £15,000, 8¼ per cent.; £15,000 and under £16,000, 8½ per cent.; £16,000 and under £17,000, 8¾ per cent.; £17,000 and under £18,000, 8⅞ per cent.; £18,000 and under £19,000, 9 per cent.; £19,000 and under £20,000, 9¼ per cent.; £20,000 and above, 10 per cent.

(iii.) *Special Rates.* Half the above rates are charged the parent, issue, husband, wife, and issue of husband or wife, who are *bona-fide* residents of, and domiciled in, Western Australia.

7. **Tasmania.**—(i.) *Legislation.* The duties imposed in connection with probates and letters of administration in Tasmania are provided for by the following Acts:—

- (a) The Deceased Persons' Estates Act of 1874 and 1881.
- (b) The Probate (Foreign) Act 1893.
- (c) The Probate Act 1893, with amendment in 1906.
- (d) The Deceased Persons' Estate Management Act 1903.
- (e) The Deceased Persons' Estates Duties Act 1904.
- (f) The Death Duties (Deductions) Act 1909.

The Probate Duties Act of 1868 levied a scale of rates which remained in force until the passing of the Deceased Persons' Estates Duties Act in 1904, when the former Act was repealed and a new schedule came into operation. The Death Duties (Deductions) Act provides for the deduction from death duties of the amount of duty payable in the United Kingdom in respect of property situated therein.

(ii.) *Rates of Duty.* Duty at the rates given below is payable on the property derived from a deceased person, or comprised in a settlement or deed of gift in so far as it includes, or is a portion of—

- (a) His real and personal property in Tasmania, including that over which he had a general power of appointment, exercised by his will, or by the settlement or deed of gift, if the deceased was, at the time of his death, domiciled in Tasmania.
- (b) His personal property, as above, including all debts, money, etc., recoverable in action by the executor in Tasmania, if the deceased was, at time of death, domiciled elsewhere than in Tasmania; and
- (c) Property accruing to any husband by virtue of his right as husband on the decease of his wife.

When the value of the property of the deceased person, settlor, or donor, as the case may be, at the time of his death exceeds £500, and does not exceed £1000, 2 per cent. is payable; exceeding £1000 and not exceeding £2000, 2½ per cent.; £2000 and not over £5000, 3 per cent.; £5000 and not over £20,000, 4 per cent.; £20,000 and not over £100,000, 5 per cent.; and over £100,000, 10 per cent.

(iii.) *Special Rates.* Double the above rates are charged when the property is derived by, or given or accrues to a brother or sister, or the child of a brother or sister of the deceased person, settlor, or donor, but in no case is a duty of more than 10 per cent. payable. When the property is derived by a stranger in blood to the deceased person, settlor, or donor, or accrues to any collateral relation beyond the third degree, the duty is 10 per cent. on the value of the property of any value whatever. No duty is payable in respect of any money which is payable to any person by a friendly society upon the death of a member or his wife or child.

#### (b) Stamp Duties.

1. **Legislation in the Several States.**—The principal Acts at present in force in the several States relating to stamp duties are as follows:—

- (a) *New South Wales.* Stamp Duties Act 1898, with amendments in 1900, 1904, and 1907.
- (b) *Victoria.* Stamps Act 1890, with amendments in 1892, 1900, 1904, and 1908.
- (c) *Queensland.* Stamp Act 1894, with amendment in 1904.
- (d) *South Australia.* Stamp Act 1886, with amendment in 1902.
- (e) *Western Australia.* Stamp Act 1882, with amendments in 1905 and 1906.
- (f) *Tasmania.* Stamp Duties Act 1882, with amendments in 1886, 1888, 1892, 1900 and 1904.

These Acts provide for the payment of duty on bank notes, bills of exchange, and promissory notes, deeds, leases, policies, receipts, transfers, and so forth, all of which with the exception of bank notes are required to be stamped either by an impressed or adhesive stamp, as the case may be.

The revenue derived by the several States of the Commonwealth from the imposition of stamp duties for the years 1906-7 to 1910-11 is shewn in the accompanying table:—

**STAMP REVENUE (EXCLUSIVE OF PROBATE AND SUCCESSION DUTIES),  
1906-7 to 1910-11.**

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
New South Wales ...	343,666	254,538	205,022	222,720	268,091
Victoria ...	240,373	240,535	237,681	250,358	275,314
Queensland ...	119,397	142,573	132,073	145,556	174,051
South Australia ...	75,034	79,547	89,160	97,877	109,274
Western Australia ...	63,634	59,617	58,065	62,714	79,404
Tasmania ...	57,198	58,832	53,713	54,741	61,118
Commonwealth ...	899,302	835,642	775,714	833,966	967,252

2. **Bank Notes.**—Promissory notes issued by any bank are not required to bear a duty stamp either impressed or adhesive, and may be reissued as often as thought fit. An annual composition has, however, to be paid in lieu of stamp duty. This composition is payable quarterly, and is the same in all States, being at the rate of £2 per annum on every £100 or part thereof of the average annual amount of bank notes in circulation. On 2nd June, 1893, the Treasury Notes Act of Queensland was assented to, by which the issue of Treasury notes payable on demand was authorised. These notes were used exclusively by the banks in that State, but their issue has been prohibited by the Federal Bank Note Tax Act, and they have now almost passed out of circulation. (See Section xxi., Private Finance.)

The issue of bank notes by any bank is likely to be seriously restricted in the future by this Act, which passed the Federal Parliament in the session of 1910, and was assented to on 10th October, 1910. Further reference is made to the Act in the section dealing with Private Finance. It is enough to say here that it imposes a tax of 10 per cent. per annum on all bank notes issued or reissued by any bank in the Commonwealth after the commencement of the Act and not redeemed.

3. **Bills of Exchange and Promissory Notes.**—(i.) *Rates.* In all the States except New South Wales, when a bill of exchange or promissory note is payable on demand, the rate charged is one penny. When the bill was not payable on demand the duty levied in New South Wales, until the Amendment Act of 1907 came into force on 1st January, 1908, was sixpence for every £25 or part thereof, but under this Act no duty is now payable on bills of exchange or promissory notes in that State. The rate in Victoria for all bills of exchange was sixpence for every £25\* up to £100, and one shilling for every £50 over £100, but under the Act of 1908 these rates only apply to those bills both drawn in and payable in Victoria, all others being free from duty. One shilling is charged in Queensland for every £50. For every £25 the duty in South Australia is sixpence if the bill is

\* "Or fractional part thereof" is to be understood after all amounts mentioned.



negotiable in the Commonwealth, but when a bill is drawn in South Australia and payable in any place beyond the Commonwealth, one shilling is charged for every £100, in which case an adhesive stamp only is to be used. In Western Australia, when the amount of the bill does not exceed £25 the duty payable is sixpence, when it exceeds £25 the duty is increased by sixpence for every £25 up to £100, and when it exceeds £100, one shilling for every £50 is charged. An amount of threepence is levied in Tasmania for a bill not exceeding £5; sixpence for one exceeding £5 and under £25; and an additional sixpence for every succeeding £25.

(ii.) *Exemptions.* The chief classes of bills which are exempt from taxation are Government debentures, Treasury notes, drafts on account of Public Service, drafts by banker on banker, letters of credit in the State, etc.

4. **Bills of Lading.**—(i.) *Rates.* The charge made for a bill of lading or copy thereof is sixpence in four of the States, viz., New South Wales, Victoria, South Australia, and Tasmania. In Queensland the rate is one shilling, and for a receipt of a bill of lading sixpence, whilst in Western Australia the duty is threepence if the goods do not exceed half a ton in weight or measurement, and sixpence if the goods exceed that quantity. The Acts provide that no bill of lading is to be stamped after its execution.

5. **Receipts.**—(i.) *Rates.* The duty payable on receipts given on payment of the amount of £2 or upwards in the States of Victoria, South Australia and Western Australia is one penny. Under the provisions of the Stamp Duties Act of 1898 the rate in New South Wales was twopence for £2 or over, but this was repealed by the Stamp Duties Amendment Act of 1907, and no duty is now payable on receipts in that State. Acknowledgments for payment of £1 or upwards were taxed one penny in Queensland under the 1894 Act, but by Amendment Acts of 1901, 1903 and 1904, the first two of which have since been repealed, it was provided that amounts of £1 and less than £2 were to be taxed one penny; £2 and less than £50, twopence; £50 and less than £100, threepence; and £100 or over, sixpence for every £100 or part thereof. By the 1904 Amendment Act of Tasmania, receipts for sums amounting to £2 and not over £5 are subject to a duty of one penny, and when the amount exceeds £5, one penny is charged for every additional £10 or part thereof, provided that the maximum duty on any receipt is fourpence.

(ii.) *Exemptions.* The exemptions from payment of duty on receipts vary considerably in the several States, and amongst others may be mentioned the following:—On His Majesty's Service, banker's receipt for bill of exchange or promissory note, current accounts, savings bank accounts, municipal rates, money orders and postal notes, wages received by labourers, workmen, menial servants, etc.

#### (c) Land Tax.

1. **General.**—Queensland is the only State in the Commonwealth in which a State land tax is not levied, although it was not until as recently as 1907 that the first tax on land was imposed in Western Australia. In all of the other States the tax dates back to a much earlier period.

The following table shews the amount collected by means of such taxes during the financial years 1906-7 to 1910-11 in the States in which a land tax was imposed:—

LAND TAX COLLECTIONS, 1906-7 to 1910-11.

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
New South Wales ... ..	345,497	178,889	80,794	9,066	7,438
Victoria ... ..	92,438	89,496	85,559	114,357	210,640
South Australia ... ..	90,200	93,762	92,158	94,126	135,614
Western Australia ... ..	...	11,140	33,120	34,344	37,871
Tasmania ... ..	56,065	57,742	59,651	79,021	64,932
Commonwealth ... ..	584,200	431,029	351,282	330,914	456,495

2. **New South Wales.**—(i.) *Legislation.* The following Acts relating to the levying, assessment, and collection of land tax are at present in force in New South Wales :—

- (a) Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, and 1904.
- (b) Land Tax Act 1895, with amendments in 1899, 1900, and 1902.
- (c) Local Government Act 1906.

The principal Act, the Land and Income Tax Assessment Act of 1895, which was enacted for the purpose of establishing a system of direct taxation by means of a tax on land, as well as for other objects, was assented to on 12th December of that year. The Land Tax Act of 1895, assented to on the same day as the above-mentioned Act, provided for a tax which was amended in respect of certain leased lands by the amending Act of 1902, and suspended in cases, which will hereinafter be referred to, by the Local Government Act of 1906.

(ii.) *Rates.* Under the provisions of the principal Act a tax is levied on the unimproved value of all land after the deduction of £240, which deduction is only made once in the case of an owner of more estates than one. Land that is subject to mortgage is liable to a deduction each year from the tax on the unimproved value of a sum equal to the income tax leviable for that year on the interest derivable from the whole mortgage on the land, improvements included. A tax of one penny in the £ of the unimproved value was declared by the Land Tax Act of 1895. The Act of 1902, which only applies to land while it is subject to a lease from the owner which was current at the end of the year 1902, and of which not less than thirty years were at such time unexpired, and land that is subject to a lease from the owner made after the commencement of the Act for a term of not less than thirty years, provided for a similar tax to be paid conjointly by owners and lessees, according to an adjustment made by the Commissioners. Under the Local Government Act of 1906 the operation of the land tax is suspended in the case where a shire or municipality has levied a tax on the unimproved capital value of the ratable land within its boundaries.

(iii.) *Exemptions.* Some of the principal lands on which no taxation is payable are as follows :—

- (a) Crown lands which are not liable to right of purchase, and lands held by way of conditional or special lease and homestead selections under any Crown Lands Act.
- (b) Lands vested in His Majesty or in any person for or on behalf of His Majesty.
- (c) Lands vested in the Railway Commissioners.
- (d) Public roads and thoroughfares; reserves for health, recreation or enjoyment, parks, cemeteries, etc.
- (e) Lands occupied or used exclusively for public hospitals, benevolent and charitable institutions, churches, universities, affiliated colleges, mechanics' institutes, etc., and lands on which are erected public markets, town halls, etc., and land vested in any council, municipality, hospital, or affiliated college.
- (f) Land vested in trustees for the use of agricultural, horticultural, pastoral or zoological show purposes.
- (g) Land used exclusively for the site of a residence of a minister of religion ministering at some place of public worship and land used as a site for a school attached to, or connected with, any place of public worship.

3. **Victoria.**—(i.) *Legislation.* The Land Tax Act of 1910, which repealed the Act of 1890, now governs the taxation of land in Victoria. Under this Act a tax is levied on all land whose unimproved value exceeds £250. As the unimproved value rises above £250 the exemption diminishes at the rate of £1 for every £1 of excess, so as to leave no exemption at £500. There is a uniform rate of  $\frac{1}{2}$ d. per £ of unimproved value, and no amount less than two shillings and sixpence is collected.

The subjoined is a list of the principal lands that are free from taxation :—

- (a) Land, the property of His Majesty the King.
- (b) Land used for public worship, recreation, or educational purposes ; all parks, show-grounds, etc. ; the University and its affiliated Colleges.
- (c) Land vested in a municipality or a church.
- (d) Land vested in Railway Commissioners, Commissioner of Savings Banks, Melbourne and Geelong Harbour Trusts, Melbourne and Metropolitan Board of Works, etc.

4. **South Australia.**—(i.) *Legislation.* The administration of the land tax in South Australia is governed by the following Acts :—

- (a) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, and 1905.
- (b) Increase of Taxes Act 1902.

On 14th November, 1884, the principal Act, viz., the Taxation Act, was assented to. It provided for a tax to be paid on the unimproved value of any land in the State of South Australia, but the rate was increased by subsequent Acts, as will be shown below.

(ii.) *Rates.* The principal Act declared a tax of one half-penny for every £1 sterling in the amount of the taxable value, and the amending Act of 1894 imposed an additional tax of one half-penny for every £1 exceeding the amount of £5000 of the total assessed unimproved value owned by any party. Under the provisions of the Increase of Taxes Act of 1902 the general rate was augmented by one farthing in the £1 for the year 1903 only. This was repeated in 1904 for the year 1905 only. The last-mentioned Act also increased by one farthing the tax payable on land valued over £5000, as provided in the Act of 1894 for the one year only, the present rate payable on property exceeding £5000 in value being, therefore, one penny for every £1 of the total assessed unimproved value over that amount. In the case of absentees an addition of 20 per cent. to these rates is provided for under the Amending Act of 1894. Under this Act absenteeism consisted of absence from the State of South Australia for the period of two years prior to the date on which the tax became due, but the duration of absence was reduced to twelve months by the Amendment Act of 1904.

(iii.) *Exemptions.* The subjoined is a list of lands that are free from taxation :—

- (a) Land of the Crown which, for the time being, is not subject to any agreement for sale or right of purchase.
- (b) Park lands, public roads, cemeteries, and reserves.
- (c) Land used solely for religious or charitable purposes, or by any public institute.

5. **Western Australia.**—(i.) *Legislation.* The Land and Income Tax Assessment Act of 1907—the first Act relating to the payment of a tax on land in Western Australia—was assented to on 20th December, and came into force on 1st January following. A tax on the unimproved value of land was imposed by the Land Tax and Income Tax Act, which received assent and came into force on the same day as the above-mentioned Act.

(ii.) *Rates.* A tax at the rate of one penny for every pound sterling of the unimproved value of land is charged, provided that the aggregate value of the land held exceeds £50. A rebate of one half of the tax levied is allowed to every owner of improved land.

(iii.) *Exemptions.* The lands specified below are exempt from assessment for taxation :—

- (a) All lands held by or on behalf of His Majesty.
- (b) Public roads and thoroughfares, public reserves for health, recreation, or enjoyment, and public parks, university endowments, cemeteries and commons.
- (c) Land used in connection with any public hospital, benevolent, charitable or religious institution, mechanics' institute, school of arts, etc., and land on which is erected any State market, town hall, or municipal chambers.

- (d) All lands held as mining tenements, and lands dedicated to, or vested in trustees, and used for zoological, agricultural, pastoral, or horticultural show purposes, or other public scientific purposes.
- (e) Land, the unimproved value of which does not exceed £50.

**6. Tasmania.**—(i.) *Legislation.* The Land Tax and Income Tax Act of 1910 governs this form of taxation in Tasmania. According to it a land-owner pays in respect of every pound sterling of unimproved value according to the following scale.

(ii.) *Rates.* When the total unimproved value is less than £2500, 1d. in the pound is payable; £2500 and under £5000, 1½d.; £5000 and under £15,000, 1¾d.; £15,000 and under £30,000, 1¾d.; £30,000 and under £50,000, 2d.; £50,000 and under £80,000, 2½d.; £80,000 and above, 2¾d.

(iii.) *Exemptions.* The number of exemptions as contained in the principal Act is too lengthy to be given in detail, and a few of the most important only are herewith appended:—

- (a) Lands of the Crown which, for the time being, are not subject to lease, sale, etc., and land the property of and occupied by or on behalf of His Majesty.
- (b) Botanical gardens at Hobart and Launceston.
- (c) Public roads, cemeteries, reserves, and recreation grounds.
- (d) Land on which is built any public library, museum, hospital or any building used solely for charitable or religious purposes, or State Schools.
- (e) Any land owned by any local authority, or any local governing or statutory public body.

(d) **Income Tax.**

**1. General.**—A duty on the income of persons, whether it be derived from personal exertion or from the produce of property, is now imposed in all the States of the Commonwealth. As will be seen in dealing with the different States, the rates, exemptions, etc., are widely divergent, but the general principle of the several Acts is strikingly consistent. The Dividend Duties Acts of Queensland and Western Australia—the former of which is now repealed—supplied to a certain extent the place of an income tax in those States in former years, but, with the increasing demands upon the State Treasury, the levying of a direct income tax has been resorted to.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1906-7 to 1910-11. In the case of Queensland and Western Australia the amount of dividend duty collected is included, as is also the amount of ability tax in Tasmania, these taxes being closely allied to the income tax.

**INCOME, DIVIDEND, AND ABILITY TAXES, 1906-7 to 1910-11.**

(STATES.)

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
New South Wales ...	283,422	215,283	202,369	219,977	269,142
Victoria ...	355,148	317,354	304,464	338,585	395,998
Queensland ...	284,476	271,299	273,091	304,693	348,513
South Australia ...	166,582	212,643	160,777	180,923	168,707
Western Australia ...	116,916	113,967	134,164	132,180	134,075
Tasmania ...	116,949	101,433	94,015	110,258	115,836
Commonwealth ...	1,323,493	1,231,979	1,168,880	1,286,616	1,432,271

2. **New South Wales.**—(i.) *Legislation.* The Acts under which the administration of the income tax is carried out in New South Wales are as follows:—

- (a) Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, 1904, and 1911.
- (b) Taxation Amending Act 1905.

The Land and Income Tax Assessment Act, which was assented to on 12th December, 1895, and came into force on the first day of the following year, is the principal Act. Under this Act the amount of taxable income from all sources for the year immediately preceding the year of assessment is the amount on which tax is payable, except in the case of income earned outside the State of New South Wales, which is not subject to taxation. The 1898 Act declared that for the purposes of taxation, the extracting from the soil, winning, producing, or manufacturing in the State of any product, commodity or substance and its export, is part of the carrying on of such trade in New South Wales, and the value of such product, etc., when exported, is income earned in the said State. The 1911 Act repealed the Income Tax Act of 1895 with its amendment of 1907, and also the Taxation Amending Act of 1906. It also amended the Taxation Amending Act of 1905, and entirely altered the rates originally imposed by the Income Tax Act of 1895.

(ii.) *Rates.* Under the Act of 1911 the rates payable in New South Wales are as follows:—

- (a) Tax payable by a company, 1s. 2d. in the £.
- (b) In the case of a person, not a company, in possession of an income not exceeding £700 per annum, 6d. in the £. There is an addition of one-third if the person is an absentee, and an addition, or further addition, in any case, of one-third on such part of income as is derived from property.
- (c) If income exceeds £700 then tax is as in following schedule:—£700 to £1700, 7d.; £1700 to £2700, 8d.; £2700 to £4700, 9d.; £4700 to £6700, 10d.; £6700 to £9700, 11d.; and above £9700, 1s. in the £. In addition, the same rates as regards absentees, etc., mentioned in (b) above also apply.

(iii.) *Exemptions.* The subjoined is a list of incomes, revenues, and funds which are exempt from the payment of income tax:—

- (a) Income not exceeding £300 per annum.
- (b) Revenues of municipal corporations or other local authorities.
- (c) Incomes of mutual life assurance societies, and of other companies or societies not carrying on business for purposes of profit or gain.
- (d) Dividends and profits of the Savings Bank of New South Wales, the Post-office Savings Bank, and the income of registered friendly societies.
- (e) Incomes and revenues of all ecclesiastical, charitable, and educational institutions of a public character.
- (f) Income derived from the ownership, use, or cultivation of land subject to land tax.

The exemptions declared in sub-sections (b) to (e) above do not extend to the salaries and wages of persons employed by such corporations, companies, etc.

(iv.) *Deductions.* In the case of a company the person liable to taxation in respect of an income exceeding £300 is, under the Act of 1911, entitled to a deduction of £300 in the assessment of such income. This Act also provides that there shall be a reduction of £50 for each child who is wholly maintained by a taxpayer, and who at the commencement of the year in respect of which the tax is levied is under the age of 18 years. Any such reduction shall in the first place be made from so much of the income as is derived from personal exertion. But where the income so derived is less than the amount of reduction authorised, the reduction shall be made to the full extent of such income, and the

balance not so applied shall be deducted from the income derived from property. Where there is no income derived from personal exertion, the deduction is made from income from property.

In addition to the above, deductions are allowed on account of losses, repairs, cost of earning incomes, etc., and also on account of expenditure not exceeding £50 per annum on life insurance.

3. **Victoria.**—(i.) *Legislation.* The principal Act in Victoria, the Income Tax Act of 1895, was assented to on 29th January of that year. On the 24th December following the Income Tax Rate Act received assent, and since then, with one exception, an Act has been passed each year declaring rates for the year ending 31st December following the date on which the Act came into force. The first scale of taxation was provided for by the Income Tax Rate Act 1895, and remained in force until 1st January, 1903, when the first amendment of 1903 came into force. The rates contained in the latter Act were superseded when the second amendment of 1903 came into operation, and were further altered by the 1904 Act, the rates of which are in force at present.

(ii.) *Rates.* Under the provisions of the last-mentioned Act a person, not being a company, is subject to the following rates of duty on the amount of his income from personal exertion, viz.—For every £1 up to £500, threepence; over £500 and up to £1000, fourpence; £1000 and up to £1500, fivepence; and over £1500, sixpence; with double these rates if the income be derived from property. Incomes not exceeding £156 were exempt from taxation under this Act, and this exemption was, under the 1906 Act, increased to £200, at which sum it still stands. The minimum income subject to tax is thus £201. Incomes between £201 and £500 are allowed an exemption of £150, while those above £500 pay tax on the full amount. The Act of 1908 provided that the amount of income tax, computed on the above basis, to be payable by a person, not being a company, for the year ending 31st December, 1909, should be reduced by 20 per cent., but this reduction was repealed in 1910. Land used as a residence by the owner is deemed to return 4 per cent. on its actual capital value.

(iii.) *Special Rates.* (a) A tax of sevenpence is levied on the income of any company liable to tax, not being a life assurance company, for every pound sterling of the taxable amount thereof, and a similar tax of eightpence on a company which carries on in Victoria the business of life assurance; and (b) a tax assessed on five pounds in every £100 of the amount payable to him for the carriage of passengers, live stock, mails, or goods shipped in Victoria, is imposed on every owner or charterer of a ship whose principal place of business is out of Victoria.

(iv.) *Exemptions.* Some of the most important exemptions from taxation are as follows:—

- (a) Persons whose income does not exceed £200.
- (b) Income of a Governor, a Minister of the Crown as such, Board of Land and Works, Railway Commissioners, Harbour Trust, Board of Works, Fire Brigades, Savings Bank, University, Working Men's College, or any Public College affiliated to the University.
- (c) Incomes of religious bodies, registered friendly, provident, building and trade union societies.
- (d) Trust societies, associations, etc., not carrying on business for purposes of gain to members; mutual fire insurance companies and fire or marine insurance companies, licensed under the Stamps Acts, whose head office is in Australia, and mining companies.
- (e) Interest accruing to any person not resident in Victoria from stock, debentures or Treasury bonds of the Government of Victoria, or issued by any public or municipal trust, body or corporation.

(v.) *Deductions.* Expenditure incurred in Victoria by any taxpayer in the production of his income, and all taxes payable by him (income tax excepted) are allowed to be deducted from the gross amount of his income, as is also the amount of all premiums not exceeding £50 paid by a taxpayer in respect of life assurance policies; but no deduction by way of exemption from income tax is permitted to a person who has been out of the State for six consecutive months in the year during which the income was received, or for any sum expended on repairs of premises, implements, etc., used for the purpose of trade, or for bad debts and the maintenance of the families of taxpayers.

4. **Queensland.**—(i.) *Legislation.* The laws under which the income tax of Queensland is regulated are contained in the Income Tax Act of 1902, and its amendments of 1902, 1904, 1905, 1906, and 1907. The first-named, which is the principal Act, was assented to on 1st December, 1902. The Dividend Duty Act of 1890, which imposed a tax on the dividends declared by public companies having their head office or place of business in Queensland, was repealed by the Income Tax Amendment Act of 1904, and in lieu thereof the rates that are shewn in (c) below are enforced.

(ii.) *Rates.* The present rates of duty as laid down in the Amendment Acts of 1906 and 1907 are as follows, provided that the total income of a person, not being a company or an absentee, exceeds £200 :—

- (a) On the income derived from personal exertion :—Where the total income does not exceed £500 the tax levied is sixpence for every pound; where it exceeds £500 and does not exceed £1000, sixpence for every pound of the first £500 and sevenpence for every pound over £500; where it exceeds £1000 and does not exceed £1500, sevenpence for every pound of the first £1000 and eightpence for every pound over £1000; and when the income exceeds £1500, eightpence for every pound is payable.
- (b) On the income derived from the produce of property the rate is ninepence for every pound.
- (c) On the income of all companies, or of an absentee, that is, a person not domiciled in Australia, one shilling in the pound is charged, provided that in the case of a company whose head office is in Queensland, the income is assessed at not less than the amount of dividends declared during the year, and if the profits remain undistributed amongst the shareholders, only sixpence in the pound is payable upon such undistributed profits. In the case of foreign companies, that is, companies whose head office is outside Queensland, special rules are given in the Act for determining the taxable amount of income.

(iii.) *Exemptions.* Included in the list of exemptions are the following incomes which are free from taxation :—

- (a) Income of a person, not being a company, which does not exceed £200.
- (b) Income of the Governor of Queensland, and the revenues of local bodies derived for purposes of local self-government.
- (c) Incomes of societies and institutions not carrying on business for purposes of profit or gain, and of any registered friendly societies.
- (d) Incomes and revenues of religious, charitable, and educational institutions of a public character.
- (e) Incomes arising or accruing from debentures, stock or Treasury Bills issued by the Government of Queensland, or derived as dividends from any company which has paid in Queensland income tax on the profits from which such dividends are paid.

(iv.) *Deductions.* When the income of a person, not being a company or an absentee, exceeds £200 per annum, the deduction of £200 is, in the first place, made from the

income, if any, derived from personal exertion. The amount of all premiums not exceeding £50 paid by a taxpayer in respect of life assurance policies, or into any superannuation fund, etc., and all losses and outgoings actually incurred in Queensland by him in production of his income, are also amongst the deductions which are allowed.

5. **South Australia.**—(i.) *Legislation.* Under the Acts given herewith the income tax of South Australia is collected :—

- (a) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, 1905, and 1908.
- (b) Additional Income Tax Act 1893.
- (c) Income Tax Continuance Act 1893, with amendments in 1897 and 1898.
- (d) Increase of Taxes Act 1902.

On the 14th November, 1884, the principal Act, the Taxation Act, was assented to. The rates of duty enforced thereby were superseded in order by the Additional Income Tax Act of 1893, the Amendment Act of 1894, the Increase of Taxes Act of 1902, and the Amendment Act of 1903, the scale enacted by the latter Act still remaining in operation.

(ii.) *Rates.* Under the last-mentioned Act the income of every person of the value of £200 or over is subject to a tax of fourpence half-penny for every pound up to and inclusive of £800, and sevenpence for every pound above that amount if the income be derived from personal exertion; but if the income consist of the produce of property, the rate is ninepence for every pound up to and inclusive of £800, and thirteence half-penny for every pound above the sum of £800. A tax of £5 on every £100 received by foreign shipping companies is imposed under the Act of 1908.

(iii.) *Exemptions.* The following incomes are not subject to the payment of income tax :—

- (a) Income of every person under the value of £200.
- (b) Income of municipal corporations and district councils.
- (c) Income of companies, public bodies and societies, not carrying on business for the purpose of gain to be divided among the shareholders, and the income of all friendly societies.
- (d) Income derived from land on which land tax is payable, provided that such income does not exceed 5 per cent. of the actual value thereof.
- (e) Income derived from land and produced by personal exertion where the land does not exceed £1000 in unimproved value.

(iv.) *Deductions.* All expenses, etc., actually incurred by a taxpayer in the production of his income are deducted from the gross amount of his income. If he has been out of South Australia for twelve consecutive months prior to the date on which the tax falls due, or if his net income from all sources exceed £400, no deduction of any kind is allowed. In the case of an income which exceeds £200, that sum is deducted from the net amount of income derived from the produce of property, but if such income does not amount to £200, the difference is taken from that derived from personal exertion. No deductions are allowed for (a) cost of maintenance of a taxpayer and his family or establishment; (b) cost of implements, etc., for purposes of the trade, except renewals for wear and tear; or (c) domestic and private expenses.

6. **Western Australia.**—(i.) *Legislation.* On the 20th December, 1907, the first Income Tax Act of Western Australia received assent under the title of the Land and Income Tax Assessment Act 1907, and on the same day the Land Tax and Income Tax Act was passed, declaring rates for the year ending 30th June, 1908. A similar Land Tax and Income Tax Act is passed each year declaring the rates to be levied for the current financial year.



(ii.) *Rates.* A tax of fourpence in the pound is levied on the annual amount of all incomes exceeding £200 per annum. An additional 50 per cent. is payable on the income of any person who has not been resident in the Commonwealth of Australia during any part of the year preceding the year of assessment, provided that he has not been absent on public service.

(iii.) *Exemptions.* The following are the most important cases of incomes, revenues, and funds exempt from income tax :—

- (a) Incomes not exceeding £200 per annum.
- (b) Revenues of municipal corporations, road boards, or other statutory public bodies.
- (c) Incomes of life assurance companies and of companies or societies not carrying on business for the purpose of profit or gain.
- (d) Dividends and profits of companies subject to duty under the Dividend Duties Act, and of the Government Savings Bank and Agricultural Bank.
- (e) Income of the Governor of Western Australia, and of all ecclesiastical, charitable and educational institutions of a public character.
- (f) Incomes arising or accruing to any person from Western Australian Government debentures, inscribed stock, and Treasury Bills.
- (g) Income derived from land on which land tax is payable.

(iv.) *Deductions.* Sums expended by a taxpayer for repairs of premises, and expenses, etc., incurred in the production of his income are deducted from the amount on which duty is payable; as are also sums not exceeding £50 in the aggregate which are paid as life assurance premiums or in connection with fidelity guarantees or bonds. The amount paid to a taxpayer's sons and daughters, over the age of sixteen years, employed in his trade or occupation, and a sum representing ten pounds for each child under the age of sixteen residing with, and dependent upon him, are also allowed to be deducted from his income.

(v.) *Dividend Duties Act in Western Australia.* This Act was passed in order to impose a tax on the dividends or profits of incorporated companies, and repealed the Company Duties Act passed in 1899. The Dividend Duties Act was passed on 20th December, 1902, and an amendment was assented to on 14th December, 1906. The principal Act provides that within seven days after the declaration of a dividend by a company carrying on business in Western Australia such company shall pay to the Colonial Treasurer a duty equal to one shilling for every pound of the amount or value of such dividend. A company that carries on in the State any insurance or assurance business exclusively (not being a life assurance company) is required to pay, on or before 1st March in each year, a sum equal to twenty shillings for every £100 of premiums, and a proportionate sum for every fraction of £100 of such premiums. The rates payable by shipping companies are 5 per cent. of 5 per cent. on all inward or outward traffic, including passenger fares, and 5 per cent. of the profits on sales of coal or other goods, or of the profits of vessels trading exclusively within the State.

7. *Tasmania.*—(i.) *Legislation.* The Land Tax and Income Tax Act of 1910 which repealed the Income Tax Act of 1902 and its amendment, governs this form of taxation in Tasmania. The tax is levied according to the following scale :—

(ii.) *Rates.* In the case of income derived from personal exertion the scale is as follows :—Under £125, 4d.; between £125 and £150, 4½d.; between £150 and £250, 4¾d.; between £250 and £350, 5½d.; between £350 and £400, 5¾d.; between £400 and £700, 6d. on first £400 and 7d. on the remainder; between £700 and £900, 6d. on first £400, 7d. on next £200, and 8d. on remainder; between £900 and £1000, 6d. on first £400, 7d. on next £200, 8d. on next £200, and 10d. on remainder; above £1000, 6d. on first £400, 7d. on next £200, 8d. on next £200, 10d. on next £200, 1s. on next £500, 1s. 2d. on next £500, and 1s. 4d. on remainder.

The duty levied by the principal Act is one shilling for every pound sterling of the taxable amount derived from the produce of property, provided that the income is £100 or over per annum. The same scale also applies to the income of any company except those that are specially mentioned below, and to dividends.

(iii.) *Exemptions.* The exemptions from taxation in this State comprise the following :—

- (a) Income of any person, not being a company, under £100 per annum, provided that such income is not received as a prize in any lottery authorised by law in Tasmania.
- (b) Revenues of Municipal Corporations, Road Trusts, Town and Marine Boards, Water Trusts and other local government bodies.
- (c) Incomes of companies, societies, etc., not carrying on business for the purposes of gain to the shareholders, and registered friendly societies.
- (d) Income of the Governor of Tasmania.
- (e) Income derived as rent for the use and occupation of land that is subject to land tax.
- (f) Income of every person arriving in Tasmania for a period of six months after his arrival.

(iv.) *Deductions.* Incomes under £80 are exempt in cases of unmarried persons, or under £100 in cases of married persons, widowers, and widows maintaining at least one child under the age of sixteen years. For incomes between £80 and £400 the following deductions are allowed :—Between £80 and £110, £70; between £110 and £125, £60; between £125 and £150, £50; between £150 and £250, £40; between £250 and £350, £30; between £350 and £400, £20. Also every tax-payer, the taxable amount of whose income is less than £150, can claim a rebate of two shillings and sixpence for every child under the age of sixteen.

(v.) *Ability Tax in Tasmania.* The Taxation Act of 1904 provided for the levying of a tax upon persons in proportion to their means or ability. It was assented to on 1st November, 1904, and an Amending Act was passed on 30th November, 1906. The assessment of the taxable amount was determined according to the annual value of the property occupied or the amount paid for board and lodging, as the case may be, and varied in the case of property from one penny to sixpence in the pound of annual value, with a minimum of two shillings and sixpence, and in the case of board and lodging from three halfpence to sixpence in the pound on the amount payable annually for board and lodging. This Act was repealed by the Land and Income Taxation Act of 1910.

**8. Taxation of Commonwealth Salaries and Allowances.**—On 8th October, 1907, the Commonwealth Salaries Act, passed by the Federal Parliament, received the Governor-General's assent. By this Act it is declared that salaries and allowances paid by the Commonwealth are liable to taxation by the States. The tax is payable in the State in which the officer resides and the salary is earned, and in the case of a member of the Parliament of the Commonwealth, in the State in which he was elected. The only exemption from taxation is the salary of the Governor-General. This Act was the outcome of considerable litigation, brought about by the refusal of persons in receipt of Federal salaries and allowances to pay income tax in respect thereof.

### § 3. Trust Funds.

**1. Nature.**—In addition to the moneys received by the several State Governments as revenue, and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the Governments in trust for various purposes. One of the chief sources of these trust funds is the State Savings Bank, which exists in each State, either as a Government department or under the control of a Board acting under Government supervision or Government guarantee. In most of the States also, sinking funds

for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Government. In all the States except New South Wales, life assurance companies carrying on business are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits go to further swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., find a place in these funds. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be frequently liquidated in this manner is worthy of very serious consideration.

2. **Extent of Funds.**—The amount of such funds held by the several State Governments on 30th June, 1911, was as follows:—

**TRUST FUNDS ON 30th JUNE, 1911.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Amount of trust funds	4,522,915	7,355,548	5,419,422	796,407	8,471,687	561,647	27,127,626

**§ 4. Loan Funds.**

1. **Nature.**—As early in the history of Australia as 1842 it was deemed expedient to supplement the revenue collections by means of borrowed moneys, the earliest of the loans so raised being obtained by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2½d. to 5½d. per £100 per diem, or approximately from 4½ per cent. to 8 per cent. per annum. The principal reason for Australian public borrowing, however, has been the fact that the Governments of the several States have, in addition to ordinary administrative duties, undertaken the performance of many functions which, in other countries, are usually entrusted to local authorities, or left to the initiative of private enterprise. Principal amongst these have been the construction of railways and the control of the railway systems of the several States, while the assumption by the State Governments of responsibilities in connection with improvements to harbours and rivers, and the erection of lighthouses, as well as the construction of works for the purposes of water supply and sewerage, have materially swelled the amounts which it has been considered expedient to obtain by means of loans. The Australian loan expenditure and public debt thus differ very materially from those of most European countries, where such expenditure is very largely incurred for purposes of defence, or absorbed in the prosecution of war. The debt of Australia, on the other hand, consists in the main of moneys raised and expended with the object of assisting the development of the resources of the Commonwealth, and is, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. **Loan Expenditure, 1910-11.**—During the year ended 30th June, 1911, the actual expenditure of the Australian States from loan funds amounted to £11,926,123, New South Wales with a total of £3,921,758 being the principal contributor to this amount, while Victoria, whose expenditure amounted to £2,657,271, ranked second. The chief item of expenditure for the year was that of railways and tramways, which represented a total of £6,884,430, water supply and sewerage works contributing the amount of £1,383,070; the expenditure on harbours, rivers, etc., and roads and bridges totalling £743,918, and land purchases for settlement, £1,748,354, were the most important of the remaining items. Details for the year for each State are given in the following table:—

## STATE LOAN EXPENDITURE, 1910-11.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ...	2,547,672	1,230,381	1,686,451	590,484	747,748	81,694	6,884,430
Water supply and sewerage ...	730,819	311,709	2,780	224,312	113,450	...	1,383,070
Harbours, rivers, etc. ...	234,213	183	...	145,185	223,395	140,942	743,918
Roads and bridges ...	65,564	...	36,673	15,914	52,910	30,944	202,005
Public buildings ...	...	65,278	165	...	49,859	...	115,302
Development of mines, etc. ...	...	43,648	...	8,788	...	...	52,436
Advances to settlers ...	350,000	956,900	...	438,010	...	3,444	1,748,354
Land purchases for settlement ...	...	...	246,239	...	...	43,192	289,431
Loans to local bodies ...	*864	...	18,788	*2,423	...	...	15,501
Rabbit-proof fences ...	*5,646	49,172	4,205	146,940	297,005	...	491,676
Other public works and purposes ...	...	...	...	...	...	...	...
Total ...	3,921,758	2,657,271	1,995,301	1,567,210	1,484,367	300,216	11,926,123

\* Credit.

3. **Aggregate Loan Expenditure.**—The total loan expenditure of the Australian States from the initiation of the borrowing system to the 30th June, 1911, has amounted to no less a sum than £260,988,517. The manner in which this sum has been spent in the several States is furnished in the following table:—

## AGGREGATE STATE LOAN EXPENDITURE TO 30th JUNE, 1911.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ...	58,507,286	41,577,315	27,382,012	15,225,482	12,078,756	4,433,470	159,204,321
Telegraphs and telephones ...	1,761,845	...	996,587	991,773	269,308	142,410	4,161,923
Water supply and sewerage ...	14,479,042	10,377,721	362,162	6,108,492	3,434,806	...	34,762,223
Harbours, rivers, etc. ...	11,349,176	611,059	2,447,056	2,170,279	2,717,579	3628,598	27,531,578
Roads and bridges ...	1,791,613	176,475	923,656	1,464,736	251,351	...	2,389,782
Defence ...	1,457,536	149,323	363,064	291,615	...	128,224	10,459,251
Public buildings ...	4,454,253	1,912,029	1,501,543	1,130,088	511,792	949,546	3,298,736
Immigration ...	194,430	...	2,763,070	...	106,236	235,000	1,495,670
Development of mines, etc. ...	...	232,849	...	...	1,262,821	...	1,076,092
Advances to settlers ...	683,308	214,467	...	122,963	55,354	...	5,500,722
Land purchases for settlement ...	489,000	2,924,334	...	1,670,168	300,000	117,220	3,595,684
Loans to local bodies ...	...	...	2,877,238	...	...	718,446	729,684
Rabbit-proof fences ...	52,193	...	...	365,177	312,314	...	6,782,851
Other pub. works and purposes ...	49,855	1,599,992	1,560,352	2,406,917	695,242	470,493	...
Total ...	95,269,537	59,775,564	41,176,760	31,947,690	21,995,539	10,823,407	260,988,517

\* Exclusive of £1,866,168 for "Loans in aid of Revenue."

It must be noted that the figures furnished in this table represent the amounts actually spent, and consequently differ somewhat from those given later in the statements relating to the public debt, which represent amount of loans still unpaid at a given date. The loan expenditure statement includes all such expenditure, whether the loans by means of which the necessary funds were raised have been repaid or are still in existence. On the other hand, in the public debt statement loans repaid are excluded, but in the case of loans still outstanding each is shown according to the amount repayable at maturity, not according to the amount originally available for expenditure.

4. **Relative Importance of Loan Items.**—The relative importance of the different items of loan expenditure given in the foregoing table varies considerably in the several States, but in each instance the expenditure on railways and tramways predominates, the percentage of this item on total expenditure ranging between the limits of 41 per cent. in the case of Tasmania and 70 per cent. in that of Victoria. The following table gives for each State the percentage of each item on the total loan expenditure of that State to 30th June, 1911:—

**PERCENTAGE OF EACH ITEM ON TOTAL LOAN EXPENDITURE OF THE STATES  
TO 30th JUNE, 1911.**

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Railways and tramways ...	61.41	69.55	66.50	47.67	54.91	40.96	61.00
Telegraphs and telephones ...	1.85	...	2.42	3.10	1.22	1.32	1.59
Water supply and sewerage ...	15.20	17.36	0.88	19.13	15.62	...	13.32
Harbours, rivers, etc. ...	11.92	1.02	5.94	6.79	12.36	33.53	10.55
Roads and bridges ...	1.88	0.30	2.24	4.58	1.14		
Defence ...	1.53	0.25	0.88	0.91	...	1.18	0.92
Public buildings ...	4.68	3.20	3.65	3.54	2.33	8.77	4.01
Immigration ...	0.20	...	6.71	...	0.48	2.17	1.26
Development of mines, etc. ...	...	0.39	...	...	5.74	...	0.57
Advances to settlers ...	0.72	0.36	...	0.38	0.26	...	0.41
Land purchases for settlement	0.51	4.89	...	5.23	1.36	1.08	2.11
Loans to local bodies ...	...	...	6.99	...	...	6.64	1.38
Rabbit-proof fences ...	0.05	...	...	1.14	1.42	...	0.28
Other public works & purposes	0.05	2.68	3.79	7.53	3.16	4.35	2.60
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

**5. Loan Expenditure in Successive Years.**—In the following table are given particulars relative to the loan expenditure of the several States during each of the years 1901-2 to 1910-11 :—

**STATE LOAN EXPENDITURE, 1901-2 to 1910-11.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1901-2 ...	4,939,241	910,833	1,161,689	566,079	1,545,823	341,994	9,465,659
1902-3 ...	4,713,386	756,404	1,022,405	465,554	1,665,901	238,631	8,862,281
1903-4 ...	2,288,742	447,244	603,805	415,728	710,629	167,123	4,633,271
1904-5 ...	1,571,257	373,191	225,466	449,214	654,353	150,994	3,424,475
1905-6 ...	1,367,022	932,966	297,624	449,930	372,442	136,971	3,556,955
1906-7 ...	1,058,553	595,658	683,570	499,132	900,964	156,945	3,894,822
1907-8 ...	1,965,329	783,538	1,033,676	495,928	733,745	224,954	5,237,170
1908-9 ...	2,906,507	1,098,360	1,247,821	832,114	1,012,452	334,200	7,431,454
1909-10 ...	3,246,640	1,209,505	1,486,216	978,082	1,028,995	435,104	8,384,542
1910-11 ...	3,921,758	2,657,271	1,995,301	1,567,210	1,484,367	300,216	11,926,123

Throughout the ten years under review the loan expenditure of New South Wales exceeded that of any other of the States, and for the years 1901-2 and 1902-3 represented more than half of the aggregate loan expenditure of Australia. The large loan expenditure of New South Wales in 1901-2, 1902-3, 1908-9, 1909-10 and 1910-11 was incurred chiefly in connection with railway construction and the resumption of the foreshores and adjoining properties of Darling Harbour. In Victoria the large expenditure of 1901-2 was in great part due to railway construction, that of 1905-6 resulted in large measure from the purchase of lands for closer settlement, while the construction of railways, and water supply and sewerage works was mainly responsible for the high expenditure of 1908-9 and 1909-10. In 1910-11 the large

amount was mainly accounted for by heavy expenditure on railways and land purchased for settlement. In the case of the large loan expenditure of Queensland in 1901-2 and 1902-3, as well as that of 1906-7, 1907-8, 1908-9, 1909-10 and 1910-11, railway construction was the principal contributing item. In Western Australia the heavy loan expenditure of 1901-2, 1902-3, and 1908-9 was principally in connection with railway construction and water supply.

**6. Loan Expenditure per Head.**—The loan expenditure per head of population varies materially in the different States and in different years, reaching its highest point for the ten years under review in Western Australia in 1901-2 with £7 19s. 8d. per head, and its lowest in Victoria in 1904-5 with 6s. 2d. per head. Particulars concerning the loan expenditure per head for the ten years 1901-2 to 1910-11 are given hereunder:—

#### LOAN EXPENDITURE PER HEAD, 1901-2 to 1910-11.

Year	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	3 11 10	0 15 1	2 5 10	1 11 1	7 19 8	1 19 0	2 9 6
1902-3 ...	3 7 3	0 12 6	1 19 11	1 5 9	7 17 2	1 6 7	2 5 9
1903-4 ...	1 12 1	0 7 4	1 3 4	1 3 0	3 3 3	0 18 3	1 3 8
1904-5 ...	1 1 7	0 6 2	0 8 7	1 4 8	2 14 8	0 16 3	0 17 3
1905-6 ...	0 18 4	0 15 5	0 11 2	1 4 6	1 9 9	0 14 8	0 17 8
1906-7 ...	0 13 10	0 9 9	1 5 4	1 7 0	3 10 7	0 16 11	0 19 0
1907-8 ...	1 5 2	0 12 9	1 17 11	1 6 3	2 17 8	1 3 9	1 5 2
1908-9 ...	1 16 8	0 17 7	2 4 10	2 2 9	3 18 0	1 14 10	1 15 1
1909-10 ...	2 0 3	0 18 11	2 11 5	2 9 4	3 17 6	2 5 1	1 18 9
1910-11 ...	2 7 9	2 0 10	3 6 7	3 16 5	5 7 3	1 11 0	2 13 11

### § 5. Public Debt.

**1. The Initiation of Public Borrowing.**—The earliest of the loans raised in Australia for Government purposes was that obtained by New South Wales in 1842. This and nine other loans raised prior to 1855 were all procured locally. In the last-mentioned year Australia's first appearance on the London market occurred, the occasion being the placing of the first instalment of the New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a borrower in 1854, and made its first appearance on the London market in 1859. In the remaining States the first public loans were raised in the following years:—Queensland 1861, South Australia 1854, Western Australia 1845, and Tasmania 1867.

**2. Nature of Securities.**—All the earlier loans raised by the Australian States were obtained by the issue of debentures, some of which were repayable at fixed dates, and others by annual or other periodical drawings. In more recent years, however, the issue of debentures has given place to a great extent to that of inscribed stock, the inscription in the case of local issues being carried out by the State Treasuries, and in the cases of loans floated in London being mainly performed by the Bank of England and the London and Westminster Bank. The issue of debentures has not, however, been entirely discontinued, for within the last seven years debentures to the amount of upwards of £2,000,000 were placed on the market by the Government of New South Wales. In other States also, recent issues of debentures have taken place, the occasions usually being those in which the term of the loan is less than that ordinarily attaching to issues of

inscribed stock. Another form of security is that variously known as the Treasury bill or Treasury bond. This is usually merely a short term debenture having a currency in most instances of from three to five years. The bonds are issued in certain cases to liquidate deficiencies in revenue, and in others to obtain moneys for the purpose of carrying on public works at a time when it is deemed inexpedient to place a permanent loan on the market. The amount of the public debt of the several States held in each of these forms of security is furnished in the table hereunder:—

## PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1911.

State.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
New South Wales ...	2,197,250	92,910,760	1,400	414,516	95,523,926
Victoria ...	8,761,182	41,888,722	6,533,860	50,000	*57,983,764
Queensland ...	14,280,580	29,202,617	...	1,130,000	44,613,197
South Australia ...	2,798,100	27,451,003	1,623,900	2,351,650	†34,224,653
Western Australia ...	396,800	22,596,153	711,000	...	23,703,953
Tasmania ...	2,714,250	8,293,929	69,611	...	11,077,790
Total ...	31,148,162	222,343,184	8,939,771	3,946,166	267,127,283

\* Includes an advance of £750,000 from South Australian Government to Victorian Government.  
† Includes Northern Territory debt, £3,657,385, and debt on Port Augusta-Oodnadatta railway, £2,240,011.

The manner in which the amount of public debt of the Australian States held under these various forms of security has grown during the past nine years will be seen from the following table:—

## PUBLIC DEBT OF AUSTRALIAN STATES, 1902 to 1911.

Date.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
30th June, 1902 ...	44,191,825	161,673,758	4,006,500	4,383,126	214,255,209
" 1903 ...	43,639,525	168,388,889	6,046,775	4,796,576	222,871,765
" 1904 ...	37,741,025	172,796,361	12,493,650	4,716,576	227,747,612
" 1905 ...	39,158,744	175,047,336	12,045,100	4,487,491	230,738,671
" 1906 ...	39,587,224	181,279,045	12,194,464	5,367,087	238,427,820
" 1907 ...	38,061,799	184,157,771	13,571,985	4,358,172	240,149,727
" 1908 ...	37,665,279	190,377,823	12,131,871	3,660,516	243,835,489
" 1909 ...	31,218,229	203,640,152	13,620,561	3,294,591	251,773,533
" 1910 ...	29,765,929	213,599,894	12,393,503	1,864,337	257,623,663
" 1911 ...	31,148,162	222,343,184	8,939,771	3,946,166	267,127,283*

\* See footnotes to preceding table.

During the nine years between 30th June, 1902, and 30th June, 1911, the public debt of the States increased by £52,872,074, or at the rate of nearly £6,000,000 per annum. The amount of debentures comprised in the total debt diminished by £13,043,663 during the period, while the amount held as inscribed stock increased by £60,669,426, and as Treasury bills by £4,496,311.

3. Increase in Indebtedness of the Several States.—The table given hereunder furnishes particulars of the increase which has taken place during the past nine years in the public debts of the several States:—

## PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1902 to 1911.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
30th June, 1902 ...	71,592,485	50,933,957	40,418,177	27,273,545	14,942,310	*9,095,735	214,255,209
" 1903 ...	77,692,987	51,447,900	41,031,247	27,843,370	15,627,298	*9,228,963	222,871,765
" 1904 ...	80,033,581	51,819,962	41,773,297	28,593,645	16,090,288	9,436,839	227,747,612
" 1905 ...	82,321,998	51,763,767	41,764,467	28,773,695	16,642,773	9,471,971	230,738,671
" 1906 ...	85,641,734	53,079,800	41,764,467	30,082,635	18,058,553	9,800,631	238,427,820
" 1907 ...	85,607,832	53,104,989	41,764,467	30,526,718	19,222,638	9,923,083	240,149,727
" 1908 ...	87,635,826	53,305,487	42,264,467	29,985,858	20,493,618	10,150,233	243,835,489
" 1909 ...	90,307,419	54,667,197	44,276,067	30,436,183	21,951,753	10,134,914	251,773,533
" 1910 ...	92,525,095	55,576,725	44,276,067	31,387,870	23,287,453	10,570,453	257,623,663
" 1911 ...	95,523,926	57,983,764	44,613,197	34,224,653	23,703,953	11,077,790	267,127,283

\* On 31st December, 1901 and 1902, respectively.

The States in which the greatest increase in indebtedness was experienced during the period are New South Wales and Western Australia, the former advancing by £23,931,441, the latter by £8,761,643. On the other hand the public debt of Tasmania increased by only about £2,000,000.

4. **Indebtedness per Head.**—The indebtedness per head of population varies considerably in the several States, being highest in the case of South Australia, and lowest in that of Victoria. Details for the period from 30th June, 1902, to 30th June, 1911, are as follows:—

## PUBLIC DEBT OF AUSTRALIAN STATES PER HEAD, 30th JUNE, 1902 to 1911.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
30th June, 1902 ...	51 1 4	42 3 1	78 18 1	75 8 11	70 9 10	*50 13 9	55 5 9
" 1903 ...	54 10 3	42 14 1	79 5 0	77 1 5	69 10 8	*50 9 0	55 18 1
" 1904 ...	54 19 9	42 19 8	79 11 7	78 12 11	67 4 2	50 19 3	57 6 2
" 1905 ...	55 6 7	42 15 3	78 11 18	78 9 6	66 10 8	50 16 4	57 4 3
" 1906 ...	56 5 8	43 10 3	77 9 9	81 4 3	70 15 4	52 16 10	58 5 6
" 1907 ...	54 16 5	43 1 6	76 10 5	80 17 9	75 10 4	52 6 9	57 14 1
" 1908 ...	55 6 7	42 12 7	75 17 4	77 0 1	78 18 5	52 18 9	57 12 3
" 1909 ...	55 19 1	42 16 2	76 12 5	76 15 7	82 12 6	52 9 7	58 4 7
" 1910 ...	56 5 8	42 14 1	73 18 3	76 10 6	84 2 5	54 10 10	58 4 5
" 1911 ...	57 15 7	43 13 10	72 5 8	83 8 2	82 7 1	58 13 10	59 10 6

\* On 31st December, 1901 and 1902, respectively.

5. **Flotation of Loans.**—The early loans of the Australian States, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London than in the local money market, the practice of placing Australian public loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption and other loans locally, with very satisfactory results. In the following table are given particulars of loans of the several States outstanding on 30th June, 1911, which had been floated in London and Australia respectively:—

## PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1911.

State.	Floated in London		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
New South Wales	65,555,605	68.63	29,968,321	31.37	95,523,926
Victoria...	37,417,128	64.53	20,566,636	35.47	57,983,764
Queensland ...	37,409,347	83.85	7,203,850	16.15	44,613,197
South Australia ...	20,340,388	59.43	13,884,265	40.57	34,224,653*
Western Australia	20,114,953	84.86	3,589,000	15.14	23,703,953
Tasmania ...	8,230,250	74.30	2,847,540	25.70	11,077,790
Total ...	189,067,671	70.78	78,059,612	29.22	267,127,283

\* Including Northern Territory debt, and Port Augusta-Oodnadatta railway debt.



The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1901-2 to 1910-11, furnishes an indication of the rapidity with which the local holdings of Australian securities have grown in recent years:—

### PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1902 to 1911.

Date.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
30th June, 1902 ...	181,493,170	84.71	32,762,039	15.29	214,255,209
" 1903 ...	186,507,721	83.68	36,364,044	16.32	222,871,765
" 1904 ...	188,165,495	82.62	39,582,117	17.38	227,747,612
" 1905 ...	188,918,820	81.88	41,819,851	18.12	230,738,671
" 1906 ...	190,887,001	80.06	47,540,819	19.94	238,427,820
" 1907 ...	185,579,389	77.28	54,570,398	22.72	240,149,727
" 1908 ...	183,321,256	75.18	60,514,233	24.82	243,835,489
" 1909 ...	189,410,036	75.23	62,363,497	24.77	251,773,533
" 1910 ...	191,972,479	74.52	65,651,184	25.48	257,623,663
" 1911 ...	189,067,671	70.78	78,059,612	29.22	267,127,283

It will be seen that in the course of nine years the London indebtedness of the States has increased by £7,574,501, while the local indebtedness has increased by no less than £45,297,573. In other words, whilst on 30th June, 1902, the Australian portion of the debt represented only about 15 per cent. of the total, the proportion had on 30th June, 1911, grown to 29 per cent.

6. **Rates of Interest.**—As mentioned above, the highest rate of interest paid in connection with the earliest Australian public loans was fivepence farthing per £100 per diem or, approximately, 8 per cent. per annum. At the present time the three principal rates of interest payable on Australian public securities are 4 per cent.,  $3\frac{1}{2}$  per cent., and 3 per cent., most of the loans raised during recent years bearing interest at the rate of  $3\frac{1}{2}$  per cent. The average rate payable on the aggregate indebtedness of the Australian States is about  $3\frac{1}{4}$  per cent. For the separate States the average rate payable varies considerably, being lowest in the case of Western Australia and highest in that of Queensland; the difference between these two average rates is  $\frac{1}{4}$  per cent. In the table given hereunder particulars are furnished of the rates of interest payable on the public debt of the several States of the Commonwealth on 30th June, 1911:—

### RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE, 1911.

Rate of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
% ...	£	£	£	£	£	£	£
6 ...	...	...	...	191,200	...	...	191,200
5 ...	2,700	...	...	190,000	...	...	192,700
$4\frac{1}{2}$ ...	...	...	...	...	49,700	...	49,700
4 ...	15,956,940	15,144,131	22,514,300	10,653,350	3,018,108	4,146,868	71,433,697
$3\frac{3}{4}$ ...	11,037,821	220,000	...	9,118,555	650,000	561,320	21,587,696
$3\frac{1}{2}$ ...	51,143,192	32,332,709	16,609,514	8,109,203	12,636,145	5,847,355	126,678,118
$3\frac{1}{4}$ ...	...	50,000	...	...	...	...	74,718
3 ...	17,374,698	10,235,924	5,489,383	5,962,345	7,350,000	497,529	46,909,879
Not bearing interest	8,575	1,000	...	...	...	...	9,575
Total public debt ...	95,523,926	57,983,764	44,613,197	34,224,653	23,703,953	11,077,790	267,127,283
Average rate per cent. payable ...	£ s. d. 3 10 5	£ s. d. 3 10 10	£ s. d. 3 13 10	£ s. d. 3 13 2	£ s. d. 3 8 4	£ s. d. 3 13 6	£ s. d. 3 11 4

\* Including Northern Territory debt, £3,657,385; and Port Augusta-Oodnadatta Railway debt, £2,240,011.

The rapid increase which has taken place in recent years in the amount of Australian Government securities, bearing interest at  $3\frac{1}{2}$  per cent., is clearly shewn in the table hereunder, which gives particulars concerning the aggregate amount of the Australian indebtedness, at the several rates of interest, on 30th June in each of the years 1907 to 1911:—

**RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE,  
1907 to 1911.**

Rate of Interest.	30th June, 1907.	30th June, 1908.	30th June, 1909.	30th June, 1910.	30th June, 1911.
%	£	£	£	£	£
6 ... ..	308,900	297,900	269,800	209,500	191,200
5 ... ..	242,700	242,700	242,700	242,700	192,700
$4\frac{1}{2}$ ... ..	61,500	58,700	55,900	52,800	49,700
4 ... ..	94,972,288	87,392,377	80,403,472	76,983,242	71,433,697
$3\frac{1}{2}$ ... ..	2,513,500	3,131,760	5,218,435	10,896,757	21,587,696
$3\frac{1}{4}$ ... ..	93,522,109	104,601,533	117,970,370	121,987,932	126,678,118
$3\frac{1}{8}$ ... ..	174,718	149,718	124,718	75,000	74,718
3 ... ..	48,292,112	47,948,051	47,472,888	47,161,895	46,909,879
Not bearing interest ... ..	61,900	12,750	15,250	13,837	9,575
Total public debt ... ..	240,149,727	243,835,489	251,773,533	257,623,663	267,127,283
Average rate % payable ... ..	£3 12 1	£3 11 9	£3 11 6	£3 11 5	£3 11 4

During the four years between 30th June, 1907, and 30th June, 1911, the Australian State Government 4 per cent. securities decreased by £23,538,591, and the 3 per cent. securities by £1,382,233, while the  $3\frac{1}{2}$  per cents. advanced by £33,156,009, and the  $3\frac{1}{4}$  per cents. by £19,074,196. During the same period the total amount at all other rates than the four here mentioned declined by about 48 per cent. from £992,650 to £517,893.

**7. Interest Payable per Head.**—The relative burden of the debts of the several States in respect of interest payments will be seen from the following table, which gives for the 30th June, 1911, the amount of interest payable annually on the debt of each State as outstanding at that date, and also the corresponding amount per head of population:—

**ANNUAL INTEREST PAYABLE ON PUBLIC DEBT OUTSTANDING AT 30th JUNE,  
1911.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Total annual interest payable ...	3,227,315	1,995,877	1,670,772	1,006,303	809,982	388,964	9,009,213
Annual interest payable per head	£1 19 1	£1 10 1	£2 14 2	£2 9 0	£2 16 3	£2 1 3	£2 0 7

**8. Dates of Maturity.**—An important point in which the securities of the Australian Governments, whether in the form of inscribed stock, debentures, or Treasury bills, differ from such a well-known form of security as British consols, consists in the fact that whereas the latter are interminable, the Australian Government securities have in almost all cases a fixed date for repayment, the exceptions being the State of New South Wales, which includes in its public debt an amount representing interminable securities totalling on 30th June, 1911, £532,890; the State of Victoria, which includes £4,346,151 payable at the option of the Government at any time after 29th September, 1917; and the State of South Australia, which includes £5,122,845, similarly repayable after 1st January, 1916. The terms of the loans raised by the issue of debentures and inscribed stock have varied considerably in the different States, ranging between fifteen and fifty years, while loans obtained by means of Treasury bills have usually been for such short terms as from six months to five years. In the case of the majority

of the loans the arrival of the date of maturity means that arrangements for renewal are necessary in respect of the greater portion of the loan, as it is only in exceptional cases that due provision for redemption has been made. The condition of the money market at the date of maturity has an important bearing on the success or otherwise with which the renewal arrangements can be effected and consequently, in order to obviate the necessity for making an application to the market at an unfavourable time, several of the States have now adopted the practice of specifying a period of from ten to twenty years prior to the date of maturity within which the Government, on giving twelve, or in some cases six, months' notice, has the option of redeeming the loan. By such means advantage may be taken by the Government during the period of opportunities that may offer for favourable renewals. Particulars concerning the due dates of the loans of the several States outstanding on 30th June, 1911, are given in the following table:—

**DUE DATES OF THE PUBLIC DEBTS OF THE SEVERAL STATES OF THE  
COMMONWEALTH OUTSTANDING ON 30th JUNE, 1911.**

Due Dates.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Overdue ...	8,575	1,000	...	...	...	...	9,575
1911 ...	...	12,500	...	229,300	...	1,270,502	1,512,302
1912 ...	9,884,598	50,000	530,000	623,275	61,000	268,971	11,417,754
1913 ...	...	4,050,000	2,066,500	1,038,025	650,000	1,209,434	9,013,959
1914 ...	...	25,000	...	860,300	...	1,236,240	2,121,540
1915 ...	3,881,081	525,000	11,728,800	660,600	85,840	87,823	16,969,144
1916 ...	...	2,792,000	...	2,442,173	...	140,717	5,374,890
1917 ...	...	3,039,860	...	2,083,001	250,000	10,760	5,383,621
1918 ...	12,826,200	25,000	...	1,935,741	...	58,488	14,845,429
1919 ...	9,872,678	4,155,650	...	347,800	...	2,400	14,378,528
1920 ...	...	6,012,500	...	626,340	...	301,784	6,940,624
1921 ...	4,872,843	700,985	...	621,925	...	503,165	6,693,922
1922 ...	...	63,000	...	506,363	...	8,252	577,615
1923 ...	1,874,015	7,746,795	...	280,725	605,325	...	10,506,860
1924 ...	16,698,065	...	12,973,834	2,362,535	664,530	...	32,698,964
1925 ...	222,255	...	...	20,840	...	5,050	248,145
1926 ...	...	5,103,000	...	1,089,565	1,922,305	67,600	8,182,470
1927 ...	...	202,000	...	648,290	2,500,000	...	3,350,290
1928 ...	...	897,500	...	662,080	...	...	1,559,580
1929 ...	...	377,500	...	203,000	...	300,000	880,500
1930 ...	...	1,754,850	3,704,800	1,051,200	...	100	6,510,950
1931 ...	...	911,648	...	200	...	...	911,848
1932 ...	...	454,300	...	...	...	...	454,300
1933 ...	9,686,300	...	...	250,800	...	...	9,937,100
1934 ...	...	...	...	1,044,100	997,253	...	2,041,353
1935 ...	12,500,000	...	...	1,561,550	8,280,000	...	22,341,550
1936 ...	...	300,000	...	5,103,450	1,100,000	...	6,503,450
1937 ...	...	...	...	13,920	...	...	13,920
1938 ...	...	...	...	101,160	...	...	101,160
1939 ...	...	...	...	2,727,550	...	...	2,727,550
1940 ...	...	248,900	...	6,000	...	5,606,500	5,861,400
1941 ...	...	324,380	...	...	...	...	324,380
1942 ...	...	485,100	...	...	...	...	485,100
1943 ...	...	3,600	...	...	...	...	3,600
1944 ...	...	400	...	...	...	...	400
1945 ...	...	...	6,364,370	...	...	...	6,364,370
1946 ...	...	15,400	...	...	...	...	15,400
1947 ...	...	...	4,498,693	...	2,000,003	...	6,498,693
1949 ...	...	11,785,871	...	...	...	...	11,785,871
1950 ...	12,250,000	...	946,600	...	...	...	13,196,600
1951 ...	...	...	999,600	...	...	...	999,600
1953 ...	...	...	800,000	...	...	...	800,000
1954 ...	...	123,874	...	...	...	...	123,874
1955 ...	...	...	...	...	4,437,000	...	4,437,000
Indefinite...	...	...	...	...	...	...	...
Interminable	532,890	...	...	...	...	...	532,890
Annual drawings...	414,516	...	...	...	150,700	...	565,216
Total	95,523,926	57,983,764	44,613,197	34,224,653	23,703,953	11,077,790	267,127,283

In the above table those loans in the case of which the Government has the option of redemption during a specified period, have been in each instance classified according to the latest date of maturity. During the fifteen years from 1911 to 1925 inclusive, the amount falling due represents a total of no less than £138,697,872, or nearly 52 per cent. of the total outstanding at 30th June, 1911.

**9. Sinking Funds.**—The practice of providing for the ultimate extinction of the public debt by means of the creation of sinking funds, receiving definite annual contributions from Consolidated Revenue, and accumulating at compound interest, has only been consistently adopted in the case of Western Australia. This State has established, in connection with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. These funds are placed in the hands of trustees in London, by whom they are invested in the securities of the British, Indian, and Colonial Governments, and applied from time to time in the redemption of loans falling due. In the remaining States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. In the following table are given particulars of the sinking funds of each State, and the net indebtedness of each after allowance for sinking fund has been made, the details given being those for 30th June, 1911:—

**STATES SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1911.**

State	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebtedness per head.
	£	£	£	£ s. d.
New South Wales ...	95,523,926	504,921	95,019,005	57 9 6
Victoria ...	57,983,764	1,017,866	56,965,898	42 18 6
Queensland ...	44,613,197	...	44,613,197	72 5 8
South Australia ...	34,224,653*	616,956	33,607,697	81 18 1
Western Australia ...	23,703,953	2,888,035	20,815,918	72 6 5
Tasmania ...	11,077,790	414,601	10,663,189	56 9 11
Total...	267,127,283	5,442,379	261,684,904	58 6 3

\* Including Northern Territory debt, £3,657,385; and Port Augusta-Oodnadatta Railway debt, £2,240,011.

**10. London Prices of Australian Stocks.**—In examining the prices quoted for Australian State Government securities, particularly if the examination is made with the object of comparing the prices at a given time of different stocks, or the prices at different times of the same stock, several points in connection with the securities need to be kept in view; the principal of these are—(a) the rate of interest payable, (b) the date of maturity, and (c) the date at which interest is payable.

In the following table particulars are given of the London prices of some of the principal  $3\frac{1}{2}$  per cent. stocks of the several States during 1911. The quotations given are the middle prices, taken from the *Economist*, and are for the last Friday in each quarter:—

**LONDON QUOTATIONS FOR AUSTRALIAN  $3\frac{1}{2}$  PER CENT. STOCKS DURING 1911.**

State.	Rate of Interest Payable.	Year of Maturity.	Months in which Interest is Payable.	London Prices (cum dividend) on—			
				25th Mar. 1911.	21st June 1911.	30th Sept. 1911.	30th Dec. 1911.
New South Wales	$3\frac{1}{2}$ %	1918	Mar.—Sept.	98 $\frac{1}{2}$	99	98	98
Victoria ...	$3\frac{1}{2}$ %	1923	Jan.—July	98 $\frac{1}{2}$	97 $\frac{1}{2}$	98	96 $\frac{1}{2}$
Queensland ...	$3\frac{1}{2}$ %	1924-30	Jan.—July	98	96 $\frac{1}{2}$	96 $\frac{1}{2}$	96 $\frac{1}{2}$
South Australia ...	$3\frac{1}{2}$ %	1939	Jan.—July	98	98	98	97
West. Australia ...	$3\frac{1}{2}$ %	1915-35	May—Nov.	98	97	97	95 $\frac{1}{2}$
Tasmania ...	$3\frac{1}{2}$ %	1920-40	Jan.—July	97 $\frac{1}{2}$	96	97 $\frac{1}{2}$	96 $\frac{1}{2}$

Throughout the year the prices of Australian  $3\frac{1}{2}$  per cent. stocks on the London market were, on the average, about the same as those for the corresponding periods of the preceding year.

## SECTION XXI.

## PRIVATE FINANCE.

## § 1. Currency.

1. **The Three Australian Mints.**—Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855, the mint being located in the southern part of the building once known as the "rum hospital," where it has remained up to the present. It is now proposed, however, to erect more suitable buildings for its accommodation in some other part of the city. The Melbourne branch of the Royal Mint was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment, in return for which the mint receipts are paid into the respective State Treasuries, and it may be said that, apart from expenditure on buildings, new machinery, etc., the amounts paid into the Treasuries fairly balance the mint annuities.

2. **Receipts and Issues in 1910.**—(i.) *Assay of Deposits Received.* The number of deposits received during 1910 at the Sydney Mint was 1687, of a gross weight of 644,445 ozs.; at the Melbourne Mint, 3981, of a gross weight of 813,826 ozs.; and at the Perth Mint, 5977, of a gross weight of 1,484,422 ozs. The average composition of these deposits in Sydney was, gold 872.9, silver 84.7, base 42.4 in every 1000 parts; Melbourne, gold 918.8, silver 40.9, base 40.3 in every 1000 parts; and Perth, gold 817.6, silver 113.8, base 68.6 in every 1000 parts. As many parcels have, however, undergone some sort of refining process before being received at the mint, the average assay for gold shews higher in these figures than for gold as it naturally occurs.

(ii.) *Receipts.* Practically all the gold coined at the Australian mints is the produce of either the Commonwealth or of the Dominion of New Zealand. The following table shews the origin of the gold received at the three mints during 1910:—

ORIGIN OF GOLD RECEIVED AT MINTS DURING 1910.

Origin of Gold.	Sydney Mint.	Melbourne Mint.	Perth Mint.
	ozs.	ozs.	ozs.
New South Wales ... ..	128,777.18	3,107.91	...
Victoria ... ..	2,007.35	620,882.08	2
Queensland... ..	376,721.10	4,217.63	1
South Australia ... ..	1,807.98	13,168.44	...
Western Australia ... ..	402.01	15,856.34	1,482,170
Tasmania ... ..	1,593.06	26,278.81	...
Northern Territory ... ..	...	...	1,201
New Zealand ... ..	122,743.80	107,838.81	...
Other countries, origin not stated, and light gold coin ... ..	10,392.67	22,475.49	1,048
Total ... ..	644,445.15	813,825.51	1,484,422

It will be seen that practically all gold produced in New South Wales and Queensland, about one-half of that produced in New Zealand, and about one-eighth of the South Australian produce, found its way to the Sydney Mint, while the Melbourne Mint received all Victorian and about seven-eighths of the South Australian gold, together with nearly all of the Tasmanian and about one-half of the New Zealand production, and the Perth Mint coined practically all Western Australian gold with the exception of a small portion sent to Sydney and Melbourne.

(iii.) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking annually a considerable quantity of gold cast into 10-oz. bars. The issues during 1910 are shewn in the table below:—

#### ISSUES OF GOLD FROM MINTS DURING 1910.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	2,135,000	237,000	2,372,000	27,352	2,399,352
Melbourne ...	3,054,547	...	3,054,547	121,837	3,176,384
Perth ...	4,690,625	...	4,690,625	462,196	5,152,821
Total ...	9,880,172	237,000	10,117,172	611,385	10,728,557

In addition to the issue of gold the Mints are also charged with the issue of silver and bronze coin struck in London. The total value of silver coin issued in 1910 was £16,400, viz.—£6000 in half-crowns, £800 in shillings, £5400 in sixpences, and £4200 in threepences. The value of bronze coin issued was £17,680, viz., £13,940 in pence, and £3740 in halfpence.

(iv.) *Withdrawals of Worn Coin.* The mints receive light and worn coin for recoinage, gold being coined locally, while silver is forwarded to London. The value of gold coin so received in 1910 amounted to £93,033, viz.—Sydney, £32,130; and Melbourne, £60,903. The value of worn silver coins received during 1910 was £31,563, viz.—Sydney, £16,216; Melbourne, £15,347.

**3. Total Receipts and Issues.** (i.) *Receipts.* The total quantities of gold received at the three mints since their establishment are stated in the gross as follows:—Sydney, 34,349,068 ozs.; Melbourne, 33,603,747 ozs.; and Perth, 14,777,399 ozs. As the mints pay for standard gold (22 carats) at the rate of £3 17s. 10½d. per oz., which corresponds to a value of £4 4s. 11½d. per oz. fine (24 carats), it is possible to arrive at the number of fine ounces received from the amounts paid for the gold received. These amounts were:—Sydney, £126,631,982; Melbourne, £132,358,355; Perth, £52,256,673; corresponding to—Sydney, 29,811,704 ozs. fine; Melbourne, 31,159,807 ozs. fine; and Perth, 12,302,267 ozs. fine. Silver found in assaying is paid for if it exceeds 8 per cent.; in Sydney it has been paid for at the rate of one shilling and sixpence per oz. fine since 12th May, 1902; in Melbourne the price is fixed monthly by the Deputy-master of the Mint; and in the Perth accounts it has been taken at one shilling per oz.

(ii.) *Issues.* The total values of gold coin and bullion issued by the three mints were as shewn in the table on page 849. It may be said that about one-half of the total gold production of Australasia has passed through the three Australian mints, the production of the Commonwealth States to the end of 1910 being valued at £525,645,357, and that of New Zealand at £76,294,646, or a total of £601,940,003:—

## TOTAL ISSUES OF GOLD FROM MINTS TO END OF 1910.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	116,611,500	3,685,000	120,296,500	6,360,226	126,656,726
Melbourne ...	121,311,632	883,948	122,195,580	10,163,425	132,359,005
Perth ...	47,705,857	124,048	47,829,905	4,415,954	52,245,859
Total ...	285,628,989	4,692,996	290,321,985	20,939,605	311,261,590

The total issues of silver coins to the end of 1910 were £2,415,200, viz.:—Crowns, £3500; double florins, £4585; half-crowns, £722,600; florins, £528,215; shillings, £606,200; sixpences, £253,220; and threepences, £296,880.

Bronze coins to the value of £178,950 were issued, viz.:—Pence, £126,040; halfpence, £52,710; and farthings, £200.

(iii.) *Withdrawals of Worn Coin.* Complete figures as to the withdrawal of gold coin can be given for the Sydney Mint, where they amounted to £1,058,699; at the Melbourne Mint the coins withdrawn since 1890 were worth £481,154. In the case of Perth the withdrawal of worn gold coin since the opening of the Mint amounted to £344.

Withdrawals of worn silver coin amounted to £280,576 in Sydney, to £348,718 in Melbourne, and to £909 in Perth.

4. **Standard Weight and Fineness of Coinage.**—The coinage of the Commonwealth is the same as that of the United Kingdom, and the same provisions as to legal tender hold good, viz., while gold coins are legal tender to any amount, silver coins are only so for an amount not exceeding forty shillings, and bronze coins up to one shilling. As will be seen from the table below, the standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively.

## STANDARD WEIGHT AND FINENESS OF COMMONWEALTH COINAGE.

Denomination.	Standard Weight.	Standard Fineness.
	Grains.	
<b>GOLD—</b>		
Sovereign ...	123.27447	Eleven-twelfths fine gold, viz.:— Gold ... 0.91667 } 1.00000 Alloy ... 0.08333 }
Half-sovereign ...	61.63723	
<b>SILVER—</b>		
Crown ...	436.36363	Thirty-seven-fortieths fine silver, viz.:— Silver ... 0.925 } 1.000 Alloy ... 0.075 }
Double florin ...	349.09090	
Half-crown ...	218.18181	
Florin ...	174.54545	
Shilling ...	87.27272	
Sixpence ...	43.63636	
Threepence ...	21.81818	
<b>BRONZE—</b>		
Penny ...	145.83333	Mixed metal, viz.:— Copper ... 0.95 } 1.00 Tin ... 0.04 Zinc ... 0.01 }
Half-penny ...	87.50000	
Farthing ...	43.75000	

5. **Prices of Silver and Australian Coinage.**—(i.) *Prices of Silver.* The value of silver has greatly decreased since its demonetisation and restricted coinage in almost the whole of Europe. Its average price in the London market is shewn in the subjoined table:—

**AVERAGE PRICE OF SILVER IN LONDON MARKET, 1873 to 1910.**

Year.	Price per Standard Oz.	Year.	Price per Standard Oz.	Year.	Price per Standard Oz.
	d.		d.		d.
1873 ...	59.2500	1886 ...	45.3750	1899 ...	27.5000
1874 ...	58.3125	1887 ...	44.6250	1900 ...	28.3125
1875 ...	56.8125	1888 ...	42.8750	1901 ...	27.2500
1876 ...	53.0000	1889 ...	42.6875	1902 ...	24.1250
1877 ...	54.7500	1890 ...	47.7500	1903 ...	24.7500
1878 ...	52.5625	1891 ...	45.0625	1904 ...	26.3750
1879 ...	51.1875	1892 ...	39.8125	1905 ...	27.8125
1880 ...	52.2500	1893 ...	35.6250	1906 ...	30.8750
1881 ...	51.7500	1894 ...	29.0000	1907 ...	30.1875
1882 ...	51.8125	1895 ...	29.8750	1908 ...	24.3750
1883 ...	50.5625	1896 ...	30.7500	1909 ...	23.6875
1884 ...	50.6875	1897 ...	27.5625	1910 ...	24.6875
1885 ...	48.6250	1898 ...	26.9375		

The monthly fluctuations during the year 1910 were as follows:—

**AVERAGE PRICE OF SILVER IN LONDON MARKET, 1910.**

Month.	Price per Standard Oz.	Month.	Price per Standard Oz.	Month.	Price per Standard Oz.
	d.		d.		d.
January ...	24.1250	May ...	24.8125	September ...	24.8750
February ...	23.7500	June ...	24.6250	October ...	25.5625
March ...	23.6875	July ...	25.0000	November ...	25.6875
April ...	24.5000	August ...	24.4375	December ...	25.1875

(ii.) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin was only worth £1 4s. 8d. during 1910; the difference of £2 1s. 4d. represents, therefore, the gross profit or seigniorage made on the coinage of every £3 6s. This gross profit is equivalent to over 62 per cent., but from it the expenses of coining (including interest on cost of machinery) and of withdrawals of worn coin must be deducted. Still, given a large annual demand for new silver coin, even the net profit amounts to a considerable sum. Negotiations, therefore, took place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, which in 1898 resulted in permission being granted to the two Governments named to coin silver and bronze coin at the Sydney and Melbourne Mints for circulation in Australia. No steps were, however, taken in the matter, and as section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a federal matter, the question remained in abeyance until the latter part of 1908, when the Commonwealth Treasurer announced his intention of initiating the coinage of silver in the near future.

(iii.) *Coinage Bill.* In 1909 a coinage bill was introduced in the Commonwealth Parliament, which provided that the future Australian coinage should consist of the



following coins:—In gold, £5, £2, £1, and 10s.; in silver, 2s., 1s., 6d., and 3d.; and in bronze, 1d. and  $\frac{1}{2}$ d. Gold was to be legal tender up to any amount, silver up to 40s., and bronze up to 1s. Ultimately the coinage was to be undertaken in Australia, but for the time an agreement was made with the authorities of the Royal Mint in London, under the terms of which the coinage was to be done in London on account of the Commonwealth Government. Orders were given for the immediate coinage of £200,000 worth of silver, viz., one million florins, one million shillings, one million sixpences, and two million threepences. The coins bear on the obverse H.M. the King's head, with the Latin inscription which appears on the British coins, and on the reverse the Australian coat-of-arms, with the denomination and the date. The Imperial authorities undertook to withdraw £100,000 worth of the present silver coinage per annum at its face value. The first consignment of the new coinage arrived in Australia early in 1910, and in a short time all the silver coins contracted for were supplied to the Royal mints, Australia. Copper coins of the value of £10,000, viz., 1,560,000 pennies and 1,680,000 half-pennies, of a design similar to that of the silver coins, were ordered. It is not, however, intended to withdraw any of the present copper coins, but merely to make good the "leakage," which is considerable. Possibly the time is not far distant when the copper coinage will be replaced by a nickel coinage.

**6. Decimal Coinage.**—Considered apart from the cognate subject of decimal weights and measures, the introduction of a decimal coinage would present no great difficulties. Of the various systems that have been advocated from time to time, the one that appears to meet with most favour and presents the maximum advantage, would retain the sovereign as the unit, but would divide it into a thousand parts instead of the present 960 farthings. In such a system there would be the following coins (adopting the name of "cent" for the hundredth part of the sovereign):—Sovereign = 100c. (gold); half-sovereign = 50c. (gold); 20c. = 4s. (gold or silver); 10c. = 2s. (silver); 5c. = 1s. (silver); 2c. = 4.8d. (silver); 1c. = 2.4d. (silver or nickel); 0.5c. or 5 mils. = 1.2d. (nickel or bronze), 0.2c. or 2 mils. = 0.48d. (nickel or bronze); 0.1c. or 1 mil. = 0.24d. (bronze). As only the subdivisions of the present shilling would be altered, such a system could be introduced with less disturbing effects on the arrangements of trade than other proposals, *e.g.*, one which would make the present farthing its unit. It will be seen from the terms of the Coinage Act, as quoted in the preceding paragraph, that no provision has been made for the introduction of a decimal coinage, apart from the omission of the half-crown.

**7. Circulation of Specie.**—Many conflicting estimates have from time to time been made as to the amount of coin in private hands. In 1892 the general manager of one of the Sydney banks estimated the coin in private hands in New South Wales at only £725,000, while the estimate of the Deputy-master of the Mint for the same period was £4,416,000, the truth lying, no doubt, somewhere between those two estimates. In 1906 the Deputy-master of the Perth Mint conducted an enquiry with the object of obtaining information on the condition of the currency in Australia. His estimate was—sovereigns, £2,500,000; half-sovereigns, £500,000; silver and bronze coin, £1,200,000. This estimate appears, however, very low, amounting only to a little over £1 per head of population. In this connection it may be of interest to notice that two similar estimates have recently been made in England and Germany respectively. The report for 1910 of the Comptroller of the British Imperial Mint contains an estimate of the amount of gold coin in active circulation in the United Kingdom in 1910, which is put at £113,000,000 or £2 10s. per head. More recently still a German economist, Dr. Arnold of the Reichsbank, estimated the amount of gold coin in active circulation in Germany at about £110,000,000, or £1 15s. per head. If the German ratio is supposed to prevail in Australia (the British ratio is almost certainly too high), this would lead to an estimate of about £8,000,000 for the amount of gold coin in active circulation in the Commonwealth. The coin in private hands amounts, however, only to a comparatively small part of the total in the country, the value of coin held by the banks during the quarter

ended 30th June, 1911, being £32,330,705. To the active currency must be added the notes in circulation, which for the same period amounted to £3,718,458, exclusive of Queensland Treasury notes. For particulars relative to Australian notes, see page 853.

8. **Imports and Exports of Coin and Bullion.**—A table is appended shewing the imports into, and exports from, the Commonwealth of coin and bullion during the year 1910, distinguishing the countries of import and export :—

### COMMONWEALTH IMPORTS AND EXPORTS OF COIN AND BULLION, 1910.

Countries from which Imported and to which Exported.	Coin.				Bullion.			Total Coin and Bullion.
	Gold.	Silver.	Bronze.	Total Coin	* Gold. <sup>1</sup>	Silver. <sup>2</sup>	Total Bullion.	
<b>IMPORTS</b>	£	£	£	£	£	£	£	£
United Kingdom ...	25,007	327,056	16,417	368,480	966	3,826	4,792	373,272
Germany ...	...	997	...	997	...	...	...	997
Canada ...	...	...	...	...	300	...	300	300
New Zealand ...	...	...	5	5	895,217	1,209	896,426	896,431
Hawaii ...	940	...	...	940	...	...	...	940
New Caledonia ...	61	4,001	...	4,062	...	...	...	4,062
Papua ...	...	...	...	...	59,187	...	59,187	59,187
Celebes ...	...	...	...	...	330	...	330	330
U.S. of America ...	...	...	...	...	236	5	241	241
<b>Total Imports</b> ...	26,008	332,054	16,422	374,484	956,236	5,040	961,276	1,335,760
<b>EXPORTS.</b>								
Belgium ...	...	...	...	...	899	365	1,264	1,264
France ...	936	309	...	1,245	...	...	...	1,245
Germany ...	...	6	...	6	575	9	584	590
United Kingdom ...	511,810	33,500	...	545,310	1,729,060	284,481	2,013,541	2,558,851
U.S. of America ...	...	...	...	...	56,403	32,582	88,985	88,985
Ceylon ...	235,000	...	...	235,000	...	276,890	276,890	511,890
Hong Kong ...	431,846	...	...	431,846	10,436	...	10,436	442,282
China ...	18,280	...	...	18,280	...	...	...	18,280
India ...	61,609	...	...	61,609	675,221	158,820	834,041	895,650
New Zealand ...	601,108	3,500	120	604,728	7,990	261	8,251	612,979
Java ...	5,000	...	...	5,000	...	...	...	5,000
Papua ...	3,290	6,553	10	9,853	...	...	...	9,853
Fiji ...	34,300	5,100	50	39,450	...	...	...	39,450
New Britain ...	500	45	...	545	...	...	...	545
New Hebrides ...	4,600	5,732	...	10,332	...	...	...	10,332
South Sea Islands ...	38,907	6,450	...	45,357	...	...	...	45,357
Norfolk Island ...	40	...	...	40	...	...	...	40
South Africa ...	225,000	3,700	...	228,700	...	...	...	228,700
Marshall Islands ...	897	114	...	1,011	...	...	...	1,011
New Caledonia ...	...	125	...	125	...	...	...	125
Tahiti ...	...	4,000	...	4,000	...	...	...	4,000
Celebes ...	5,000	...	...	5,000	...	...	...	5,000
<b>Total Exports</b> ...	2,178,123 <sup>3</sup>	69,134 <sup>4</sup>	180 <sup>5</sup>	2,247,437	2,480,584 <sup>6</sup>	753,408 <sup>6</sup>	3,233,992	5,481,429

1. Bullion and gold contained in matte. 2. Bullion and silver contained in matte. 3. £1,199,679 Australian produce and £978,444 other produce. 4. Other produce. 5. Australian produce 6. Australian produce, £753,090; other produce, £318.

## § 2. Banking.

1. **Banking Facilities.**—(i.) *Head Offices of Banks.* Of the twenty-one banks trading in the Commonwealth, four have their head offices in London, viz., the Bank of Australasia; the Union Bank of Australia Limited; the English, Scottish and Australian Bank Limited; and the London Bank of Australia Limited. The head offices of the following four banks are in Sydney—The Bank of New South Wales, the Commercial Banking Company of Sydney Limited, the Australian Joint Stock Bank Limited (now the Australian Bank of Commerce Limited), and the City Bank of Sydney. Five

banks have their head offices in Melbourne, viz., the National Bank of Australasia Limited, the Commercial Bank of Australia Limited, the Bank of Victoria Limited, the Colonial Bank of Australasia Limited, and the Royal Bank of Australia Limited. Brisbane is the headquarters of three banks, viz., the Queensland National Bank Limited, the Royal Bank of Queensland Limited, and the Bank of North Queensland Limited. Only one bank has at present its head office in Adelaide, viz., the Bank of Adelaide; and one in Perth, viz., the Western Australian Bank. Of the two Tasmanian banks the Commercial Bank of Tasmania Limited has its head office in Hobart, and the National Bank of Tasmania Limited in Launceston. The remaining bank, the Bank of New Zealand, has its headquarters in Wellington. It is proposed, in the few instances where the banks are referred to by name, to arrange them in the order just given.

(ii.) *Establishments in Different States.* Only three of the banks have establishments in all six States of the Commonwealth, the total number of their branches and sub-branches being 534. One bank with a total of 246 branches is trading in five States, and two with 336 branches are established in four States. One bank has 61 branches distributed over three States, but has now also opened a branch in a fourth State, while seven banks with a total of 507 branches, confine their operations to two States. The remaining seven banks, with 317 branches, trade only within the State where their head offices are located. Two banks also have each a branch in the Northern Territory. Of this total of 2003 banking establishments, New South Wales contains 604, Victoria 661, Queensland 273, South Australia 236, Western Australia 171, Tasmania 56, and Northern Territory 2. In addition to the branches in the Commonwealth, four of the banks have a total of 283 establishments in New Zealand, while fourteen have each an office in London. Only three of the banks are established in the Pacific Islands, with a total of eight branches. The total for the Commonwealth amounts to about one bank to every 2250 inhabitants, which does not appear out of proportion when the general sparseness of the Australian population is taken into consideration. There is, however, a difference between the various States which is not easy of explanation, but which seems to be due chiefly to the desire of a few of the banks to open up branches wherever there is a prospect of a small amount of business, while other banks are more conservative in this respect. Thus the proportion in New South Wales is about 2704 inhabitants per bank, while in Victoria it is only 1940. This is probably owing to the fact that in Victoria, with its closer settlement, there are more centres where business can be made profitable. In Western Australia, where the proportion is lowest and amounts to one in 1585, there are, of course, exceptional circumstances which explain this apparent disproportion.

**2. Banking Legislation.**—Under section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to "Banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money." Until quite recently the only Commonwealth banking legislation passed was Act No. 27 of 1909, "An Act relating to Bills of Exchange, Cheques, and Promissory Notes," which came into force on the 1st of February, 1910. In the session of 1910, however, two Acts relating to banking were passed by the Federal Parliament. The first was the Australian Notes Act No. 11 of 1910, assented to on the 16th September, 1910, and proclaimed 1st November, 1910; and the second the Bank Notes Tax Act No. 14 of 1910, assented to on 10th October, 1910, and proclaimed 1st July, 1911. Under the first of these Acts the Commonwealth Treasurer is empowered to issue notes which shall be legal tender throughout the Commonwealth, and redeemable at the seat of Federal Government. The notes are issued in denominations of 10s., £1, £5, £10, or any multiple of £10. The Act directs the Treasurer to hold the following reserve of gold coin :—

- (a) An amount not less than one-fourth of the amount of Australian notes issued up to seven million pounds;
- (b) An amount equal to the amount of Australian notes issued in excess of seven million pounds.

For the purpose of estimating the reserve, notes which have been redeemed are not included amongst those issued.

The portion of the Act relating to the reserve has been amended by Act No. 21 of 1911, which was assented to on 22nd December, 1911. According to this amending Act the clause relating to the reserve now reads as follows:—"The Treasurer shall hold in gold coin a reserve of not less than one-fourth of the amount of Australian notes issued." It was intended that this amendment should come into force on 1st July, 1912, but the Federal Treasurer has since announced that its operation will be deferred until after the Commonwealth elections of 1913.

The Australian Notes Act prohibits the circulation of notes issued by a State six months after the commencement of the Act, and such notes will then cease to be legal tender. In addition the Bank Notes Act imposes a tax of 10 per cent. per annum in respect of all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of this Act and not redeemed.

The Notes Act and the Bank Notes Act were supplemented in the following year by the passing of No. 18 of 1911, "An Act to provide for a Commonwealth Bank," which passed both Houses and was assented to on 22nd December, 1911. The bank thus authorised has no power to issue notes, but in every other respect it has the functions of an ordinary bank of issue. It is to be managed by a governor and a deputy-governor, who are to be appointed by the Governor-General and will hold office during good behaviour for a period of seven years, after which they will be eligible for reappointment. A novel feature is the establishment of a department dealing with savings bank business only. No further reference need be made here to this department; the framers of the Act have largely followed the lines laid down by the respective State Savings Bank Acts, particularly the Western Australian Act No. 9 of 1906. The capital of the bank is to be one million pounds, to be raised by the issue and sale of debentures. These debentures will be for ten pounds or some multiple of ten pounds and redeemable at par, the Commonwealth guaranteeing interest and principal. Up to the time of writing the bank has not come into operation, but in all likelihood the appointment of governor will be made at an early date. All expenses incidental to the establishment of the bank will be met by an advance from the Consolidated Revenue Fund, such advance to be ultimately repaid with interest at the rate of three-and-a-half per cent.

Under the existing laws banks are required to furnish quarterly statements of their average assets and liabilities, but these statements are not equally complete in all the States. Until the close of 1907 these quarterly statements, together with the periodical balance-sheets of the banks (generally half-yearly, but in a few cases yearly), were the only information available in regard to banking business. During the year 1908 the Commonwealth Statistician, under the provisions of the Census and Statistics Act, asked the banks for quarterly returns giving slightly more detailed information than had previously been obtained. As, however, a few of the banks have found it impossible up to the present to give all the particulars required, while promising to do so in future, the returns for the years 1908, 1909, 1910, and 1911 have been practically left in the same condition as those for 1907 and previous years.

The Acts under which the various banks are incorporated are not all of the same nature, but it may be stated that while most of the older banks were incorporated by special Acts, *e.g.*, the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand, the newer banks are generally registered under a "Companies Act," or some

equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

3. **Capital Resources of Banks.**—The paid-up capital of the twenty-one banks, together with their reserve funds, and the rate per cent. and the amount of their last dividends, is shewn in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1911. In regard to the reserve funds it must be stated that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business.

### CAPITAL RESOURCES OF BANKS.

Bank.	Paid-up Capital.	Rate per cent. per annum of last Dividend and Bonus.	Amount of last 3-yrly. Dividend & Bonus.	Amount of Reserved Profits.
	£	%	£	£
Bank of Australasia ... ..	1,600,000	12 & 16/- bonus ps.	128,000	1,825,725
Union Bank of Australia Limited ... ..	1,500,000	14	105,000	1,371,382
English, Scottish and Australian Bank Limited ... ..	539,438	6	32,366 <sup>7</sup>	230,761
London Bank of Australia Limited ... ..	548,153 <sup>1</sup>	{ 7 Preferen. } { 5 Ordinary }	30,436 <sup>7</sup>	140,388
Bank of New South Wales ... ..	2,913,820	10	143,457	1,950,000
Commercial Banking Company of Sydney Limited ... ..	1,500,000	10	75,000	1,500,660
Australian Bank of Commerce Limited ... ..	1,180,812	3½	18,103	22,146
City Bank of Sydney ... ..	400,000	4	8,000	18,789
National Bank of Australasia Limited ... ..	1,498,220 <sup>2</sup>	6	44,947	275,351
Commercial Bank of Australia Limited ... ..	2,212,969 <sup>3</sup>	{ 3 Preferen. } { ... Ordinary }	31,760	6,512
Bank of Victoria Limited ... ..	1,478,010 <sup>4</sup>	6	44,340	262,349
Colonial Bank of Australasia Limited ... ..	439,280	7	15,375	161,971
Royal Bank of Australia Limited ... ..	300,000	7	10,500	153,492
Queensland National Bank Limited ... ..	413,494 <sup>5</sup>	...	...	...
Royal Bank of Queensland Limited ... ..	530,522	5	13,042	76,339
Bank of North Queensland Limited ... ..	100,000	5	2,500	22,991
Bank of Adelaide ... ..	500,000	10	25,000	476,486
Western Australian Bank ... ..	200,000	20	20,000	547,464
Commercial Bank of Tasmania Limited ... ..	175,000	14	12,250	198,646
National Bank of Tasmania Limited ... ..	152,040	7	5,321	54,000
Bank of New Zealand ... ..	2,000,000 <sup>6</sup>	{ 4 Preferen. } { 6 Ordinary } { & 3 bonus }	65,000	1,034,405
Total ... ..	20,181,758	...	...	10,330,457

1. £171,930 preferential, £376,223 ordinary. 2. £305,780 preferential, £1,192,440 ordinary. 3. £2,117,350 preferential, £95,619 ordinary. 4. £418,760 preferential, £1,061,250 ordinary. 5. After deducting £47,156 paid on forfeited shares. 6. £500,000 preference shares issued to the Crown under the "Bank of New Zealand Act 1903," £500,000 ordinary shares, and £1,000,000 guaranteed stock. 7. For 12 months.

4. **Liabilities and Assets of Banks.**—(i.) *Liabilities of Banks for Quarter ended 30th June, 1911.* As already stated, the banks transacting business in any State are obliged, under the existing State laws, to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statements prepared by the bank for that purpose, and have, during the years 1908, 1909, 1910 and 1911, furnished quarterly statements to the Commonwealth Statistician. As all other financial returns in this work embrace, so far as possible, a period ended 30th June, 1911, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shewn for a series of years, similarly to use the figures for the June quarter of each year. The liabilities are those to the general public, and are exclusive of the banks' liabilities to their shareholders, which are shewn in the preceding table:—

**AVERAGE LIABILITIES OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1911.**

State.	Notes in Circulation, not bearing interest.	Bills in Circulation, not bearing interest.	Balances Due to other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
New South Wales	1,819,180	401,930	206,183	25,963,079	29,259,379	55,222,458	57,649,751
Victoria	857,226	227,884	199,846	17,218,116	29,145,499	46,363,615	47,648,571
Queensland	*	194,196	124,717	8,710,486	10,922,823	19,633,309	19,952,222
South Australia	536,372	16,721	53,023	4,524,990	6,603,310	11,128,300	11,734,416
West. Australia	336,301	73,150	157,172	3,904,664	3,375,728	7,280,392	7,847,015
Tasmania	169,379	14,782	236	1,863,139	1,896,347	3,759,486	3,943,883
North. Territory	...	...	11	42,423	16,927	59,350	59,361
Commonwealth	3,718,458	928,663	741,188	62,226,897	81,220,013	143,446,910	148,835,219

\* In Queensland, Treasury notes were used instead of bank notes.

(ii.) *Assets of Banks for Quarter ended 30th June, 1911.* The average assets of the banks are shewn in the following table :—

**AVERAGE ASSETS OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1911.**

State.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Government and Municipal Securities.	Landed and House Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	Discounts Over-drafts, and all other Assets.	Australian Notes.	Total Assets.
	£	£	£	£	£	£	£	£	£
N.S.W.	14,327,758	196,690	3,405,118	1,872,002	664,115	584,349	39,001,933	1,770,752	61,822,717
Victoria	7,635,551	307,674	73,964	1,702,241	342,211	362,261	35,792,928	1,313,863	47,729,693
Q'land	3,673,454	124,282	261,871	699,362	*361,435	315,159	15,639,657	874,796	21,950,026
S. Aust.	2,611,278	2,547	118,067	337,946	119,709	118,608	8,018,597	720,538	12,047,587
W. Aust.	3,163,764	506,855	147,897	211,535	54,452	102,023	7,327,529	347,022	11,861,077
Tas.	714,005	...	181,800	113,151	13,199	215,700	2,796,045	104,180	4,138,080
Nor. Ter.	4,895	2,007	...	1,200	49	...	2,085	6,027	16,263
Cwth.	32,330,705	1,140,065	4,187,717	4,937,437	1,555,170	1,698,097	108,578,774	5,137,478	159,565,443

\* Including Queensland Treasury Notes, £275,456.

(iii.) *Liabilities of Banks for June Quarter, 1902 to 1911.* In the subjoined table, which shews the average liabilities of the banks for the quarters ended 30th June, 1902 to 1911, for the Commonwealth as a whole, it will be seen that the growth in total liabilities is almost entirely due to an increase in the deposits, and that deposits not bearing interest and deposits bearing interest have shared in that increase very equally :—

**AVERAGE LIABILITIES OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE IN THE YEARS 1902 TO 1911.**

Year.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances due to other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
1902	3,305,135	518,504	459,255	37,727,861	55,708,373	93,436,234	97,719,128
1903	3,315,747	539,132	407,947	37,056,187	54,701,047	91,757,234	96,020,060
1904	3,133,268	521,267	290,441	35,630,255	55,917,848	91,548,103	95,499,079
1905	3,036,879	555,256	446,555	36,847,610	61,295,775	98,143,385	102,182,075
1906	3,244,256	569,670	577,094	41,036,116	65,479,150	106,515,266	110,905,286
1907	3,563,151	801,878	444,460	46,781,234	65,916,735	112,697,969	117,507,488
1908	3,536,227	707,903	796,447	46,015,448	67,678,940	113,694,388	118,734,965
1909	3,510,629	720,853	555,806	46,812,632	70,945,623	117,758,255	123,545,543
1910	3,748,482	821,758	570,115	55,233,862	74,657,274	129,891,136	135,031,491
1911	3,718,458	928,663	741,188	62,226,897	81,220,013	143,446,910	148,835,219

(iv.) *Assets of Banks for June Quarter, 1902 to 1911.* A similar table shewing the average assets of the banks for the June quarters of each of the years 1902 to 1911 is shewn below. Bullion, in the case of the Tasmanian banks, is included with coin in the years 1902 to 1907.

**AVERAGE ASSETS OF BANKS IN THE COMMONWEALTH FOR THE QUARTER  
ENDED 30th JUNE IN THE YEARS 1902 to 1911.**

Year.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Landed and other Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	All other Debts Due to the Banks.*	Total Assets
	£	£	£	£	£	£	£
1902	19,744,914	1,330,304	5,337,277	656,302	1,152,534	94,015,098	122,236,429
1903	18,513,784	1,507,825	5,239,440	741,977	1,115,369	93,301,160	120,469,555
1904	17,910,771	1,447,698	5,245,312	692,688	781,368	87,705,222	113,783,059
1905	19,988,465	1,501,890	5,212,799	705,089	800,929	85,766,259	113,984,431
1906	21,268,679	1,412,763	5,160,875	802,225	1,234,921	87,889,121	117,768,584
1907	22,420,395	1,291,033	5,028,379	840,217	1,170,276	94,990,435	125,740,735
1908	23,578,293	1,353,267	4,938,212	889,377	1,131,612	101,647,044	133,537,805
1909	24,943,910	1,353,933	4,852,471	932,354	1,153,611	98,481,421	131,717,700
1910	28,826,729	1,322,899	4,919,991	973,161	1,343,669	101,371,817	138,758,266
1911	32,330,705	1,140,065	4,937,437	1,279,714	1,698,097	118,179,425	159,565,443

\* Including Queensland Treasury notes, Government and Municipal securities, and Australian notes.

The figures do not call for much comment. As the table shews, the increase in the total amount of assets is mainly due to an increase in the amount of specie held by the banks against liabilities at call and advances.

**5. Percentage of Coin and Bullion to Liabilities at Call.**—(i.) *Commonwealth.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide with a division into fixed deposits and current accounts, the division, in default of a better one, must be adopted, and in the following table "liabilities at call" are therefore understood to include the note circulation of the banks and the deposits not bearing interest:—

**PERCENTAGE OF COIN AND BULLION TO LIABILITIES AT CALL, COMMONWEALTH  
BANKS, 1902 to 1911.**

Year.	Liabilities at Call.			Coin and Bullion.			Percentage of Coin and Bullion to Liabilities at Call.
	Notes in Circulation.	Deposits not Bearing Interest.	Total.	Coin.	Bullion.	Total.	
	£	£	£	£	£	£	%
1902 ...	3,305,135	37,727,861	41,032,996	19,744,914	1,330,304	21,075,218	51.36
1903 ...	3,315,747	37,056,187	40,371,934	18,513,784	1,507,825	20,021,609	49.59
1904 ...	3,133,268	35,630,255	38,763,523	17,910,771	1,447,698	19,358,469	49.94
1905 ...	3,036,879	36,847,610	39,884,489	19,988,465	1,501,890	21,490,355	53.88
1906 ...	3,244,256	41,036,116	44,280,372	21,268,679	1,412,763	22,681,442	51.22
1907 ...	3,563,181	46,781,234	50,344,415	22,420,395	1,291,033	23,711,428	47.10
1908 ...	3,536,227	46,015,448	49,551,675	23,578,293	1,353,267	24,931,560	50.31
1909 ...	3,512,629	46,812,632	50,323,261	24,943,910	1,353,933	26,297,843	52.26
1910 ...	3,745,482	55,233,862	58,982,344	28,826,729	1,322,899	30,149,628	51.12
1911 ...	3,713,458	62,226,897	65,945,355	32,330,705	1,140,065	33,470,770	50.76

It would appear from the figures just given that the banks generally consider it advisable to hold about half the amount of liabilities at call in coin and bullion. The drop to 47.10 per cent. in 1907 was due to the very large increase in the amount of deposits during the year, and to the fact that the increase in the coin and bullion held, considerable though it was, did not keep pace therewith.

(ii.) *Queensland Treasury Notes.* No bank-notes are issued by any of the banks in Queensland, where a Treasury note has taken the place of bank-notes since 1893. These Treasury notes are disregarded in the quarterly statements of the banks; according to Treasury returns the amount outstanding on 30th June, 1911, was £263,817, partly in circulation, and the balance held by the banks. Under the Australian Notes Act, the issue of notes by a State is now prohibited.

(iii.) *States.* The proportion of coin and bullion to liabilities at call varies considerably in the different States, and is generally highest in Western Australia, and lowest in Queensland and Tasmania. A table is appended shewing the percentages for each State for the quarter ended 30th June in each of the years 1902 to 1911 :—

**PERCENTAGE OF COIN AND BULLION TO LIABILITIES AT CALL, COMMONWEALTH BANKS, 1902 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1902 ...	46.97	51.91	44.42	57.67	80.46	35.12	51.36
1903 ...	47.47	50.58	46.33	50.12	61.83	42.20	49.59
1904 ...	48.67	52.92	39.66	51.45	58.70	46.41	49.94
1905 ...	50.51	58.01	45.78	55.66	67.35	44.25	53.88
1906 ...	48.49	53.55	40.43	51.25	73.98	42.39	51.22
1907 ...	44.81	49.17	37.20	46.73	71.14	39.84	47.10
1908 ...	47.70	54.68	41.09	45.63	76.09	40.06	50.31
1909 ...	50.38	56.57	39.68	46.90	83.29	41.48	52.26
1910 ...	51.33	51.66	39.78	48.27	81.09	37.77	51.12
1911 ...	52.28	45.05	43.60	51.64	86.55	35.13	50.76

6. **Deposits and Advances.**—(i.) *Total Deposits.* The total amount of deposits held by the banks shews a steady advance during the period under review, although the totals for 1903 and 1904, when the country was slowly recovering from the effects of the drought, were slightly below those for 1902 :—

**TOTAL DEPOSITS IN COMMONWEALTH BANKS, 1902 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1902 ...	34,382,531	30,839,444	13,795,737	6,212,957	4,742,579	3,462,986	...	93,436,234
1903 ...	33,309,691	30,719,334	12,645,725	6,603,225	4,785,839	3,693,420	...	91,757,234
1904 ...	33,058,342	31,188,971	12,626,184	6,375,267	4,726,158	3,573,181	...	91,548,103
1905 ...	35,972,265	33,642,092	12,987,859	6,892,103	4,999,650	3,649,416	...	98,143,385
1906 ...	39,099,630	36,764,392	13,665,110	7,513,802	5,645,701	3,826,631	...	106,515,266
1907 ...	41,967,265	38,393,179	14,852,584	8,247,366	5,500,112	3,737,463	...	112,697,969
1908 ...	43,616,984	37,538,722	15,328,056	8,644,346	4,894,639	3,671,641	...	113,694,388
1909 ...	44,626,194	38,611,731	16,138,931	9,727,879	4,987,894	3,665,626	...	117,758,255
1910 ...	50,018,885	41,809,708	17,420,034	10,782,890	6,129,668	3,729,951	...	129,891,136
1911 ...	55,222,458	46,363,615	19,633,309	11,128,300	7,280,392	3,759,486	59,350	143,446,910

(ii.) *Deposits per Head of Population.* To shew the extent to which the population makes use of the banking facilities afforded to it, a table is given hereunder shewing the amount of total deposits per head of mean population for each of the years 1902 to 1911. The figures must not be taken to shew part of the savings of the people, as a large



proportion of the deposits is non-interest-bearing and therefore presumably used in the business of the banks' customers, together with a small part of the interest-bearing deposits.

### DEPOSITS PER HEAD OF POPULATION IN COMMONWEALTH BANKS,

1902 to 1911.

Year.	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tasmania.			C'wealth.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1902 ...	24	16	3	25	10	8	27	1	6	17	4	7	23	8	3	19	17	8	24	6	8
1903 ...	23	12	3	25	9	7	24	12	7	18	7	6	21	18	10	20	10	7	23	15	1
1904 ...	23	0	6	25	18	11	24	4	10	17	13	5	20	6	8	19	11	1	23	5	4
1905 ...	24	10	7	27	18	6	24	12	1	18	19	0	20	7	1	19	16	4	24	11	8
1906 ...	26	1	4	30	6	8	25	10	10	20	10	1	22	5	0	20	15	8	26	5	10
1907 ...	27	5	8	31	7	2	27	9	1	22	5	0	21	10	8	20	6	6	27	7	11
1908 ...	27	15	6	30	6	8	27	15	0	22	14	11	19	0	8	19	12	10	27	3	5
1909 ...	28	0	4	30	14	0	28	8	6	24	17	5	19	0	4	19	6	1	27	12	8
1910 ...	30	13	5	32	14	9	29	11	6	27	1	2	22	14	10	19	11	0	29	16	5
1911 ...	33	9	1	35	1	10	32	2	2	27	3	7	25	11	0	19	7	7	32	1	8

(iii.) *Total Advances.* In the quarterly statements furnished by the banks the column headed "all other debts due to the banks," which usually average from 75 to 80 per cent. of the total assets, is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposit of deeds or by mortgage, etc. The quarterly returns furnished to the Commonwealth Statistician in 1908 and 1909 provided for a division of the amounts contained under this heading into a number of sub-headings, but all the banks were not in a position to make the necessary division, so that under present circumstances it is impossible to separate these items, and the total amounts contained in the column must, therefore, be treated as advances. The following table shows the totals for each State during the years 1902 to 1911 :—

### ADVANCES BY COMMONWEALTH BANKS, 1902 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania	Northern Territory.	C'wealth.
	£	£	£	£	£	£	£	£
1902 ...	39,797,960	30,446,032	13,633,376	4,434,031	3,276,409	2,397,290	...	93,985,098
1903 ...	38,658,565	29,905,949	14,082,725	4,428,983	3,683,451	2,541,487	...	93,301,160
1904 ...	33,237,755	29,426,052	13,974,233	4,401,991	3,955,108	2,710,083	...	87,705,222
1905 ...	31,965,017	28,593,201	13,590,333	4,793,936	4,172,983	2,650,789	...	85,766,259
1906 ...	32,057,192	29,699,683	13,850,921	5,053,184	4,635,624	2,592,517	...	87,889,121
1907 ...	34,460,993	31,894,070	15,076,455	5,545,346	5,140,911	2,872,660	...	94,990,435
1908 ...	37,948,889	33,254,780	15,245,537	5,805,575	5,581,001	3,008,237	...	100,844,019
1909 ...	34,853,220	31,455,141	14,499,669	5,699,546	5,384,518	2,715,645	...	94,607,742
1910 ...	34,809,345	33,064,881	14,167,480	6,426,809	5,889,061	2,732,645	...	97,080,221
1911 ...	39,001,933	35,792,928	15,639,657	8,018,597	7,327,529	2,796,045	2,085	108,578,774

(iv.) *Proportion of Advances to Deposits.* The percentage borne by advances to total deposits shews to what extent the needs of one State have to be supplied by the resources of another State, and where the percentage for the Commonwealth as a whole exceeds 100, as it did in 1901, 1902, and 1903, the banks must have supplied the deficiency from their own resources, or from deposits obtained outside the Commonwealth. The following figures shew, however, that the banking business of the Commonwealth has been practically self-contained during the period under review :—

**PERCENTAGE OF ADVANCES TO TOTAL DEPOSITS, COMMONWEALTH BANKS,  
1902 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1902	115.75	98.72	98.82	71.37	69.08	69.23	100.59
1903	116.06	97.35	111.36	67.07	76.97	68.81	101.68
1904	100.54	94.35	110.68	69.05	83.69	75.85	95.80
1905	88.86	84.99	104.64	69.56	83.47	72.64	87.39
1906	81.99	80.78	101.36	67.25	82.11	67.75	82.51
1907	82.11	83.07	101.51	67.24	93.47	76.86	84.29
1908	87.00	88.59	99.46	67.16	114.00	81.93	88.70
1909	78.10	81.47	89.84	58.59	107.95	74.08	80.34
1910	69.59	79.08	81.33	59.60	96.07	72.99	74.74
1911	70.63	77.20	79.66	72.06	100.65	74.37	75.69

**7. Clearing Houses.**—The Sydney Banks' Exchange Settlement and the Melbourne Clearing House, at which two institutions settlements are effected daily between the banks doing business in New South Wales and Victoria respectively, publish figures of the weekly clearances effected. From these figures it appears that in 1911 the total clearances in Sydney amounted to £304,488,000, and in Melbourne to £290,113,000. These figures represent in both cases an increase on those for 1910, the increase in Sydney amounting to £30,144,000, and in Melbourne to £28,730,000. Owing to the different distribution of the banking business in the two cities these figures do not, however, afford a fair comparison of the volume of banking business transacted in Sydney and Melbourne.

### § 3. Companies.

**1. General.**—Returns in regard to registered companies are defective, and, with few exceptions, are not available for Tasmania. They embrace (a) Returns relating to Trustees, Executors and Agency Companies; (b) Returns relating to Registered Building and Investment Societies; and (c) Returns relating to Registered Co-operative Societies.

**2. Trustees, Executors and Agency Companies.**—Returns are available of seven Victorian, two New South Wales, one Queensland, one South Australian, one Western Australian, and two Tasmanian companies. The paid-up capital of these fourteen companies amounted to £411,922; reserve funds and undivided profits to £327,503; other liabilities, £89,148; total liabilities, £828,573. Among the assets are included:—Deposits with Governments, £140,100; other investments in public securities, fixed deposits, etc., £226,208; loans on mortgage, £109,942; property owned, £219,638; other assets, £132,685. The net profits for the year were £67,760, and the amount of dividends and bonuses £35,576. Returns as to the amount at credit of estates represented by assets are available for only six companies, viz.:—Two Victorian, one New South Wales, one Queensland, one South Australian, and one Western Australian, the total shewn being £25,211,715.

Probably nearly £20,000,000 would have to be added to this amount for the remaining eight companies, so that the total amount is probably not far short of £45,000,000. None of these companies receive deposits, and advances are only made under exceptional circumstances, and to a very limited extent, the total so shewn in the last balance-sheets being only £51,949.

**3. Registered Building and Investment Societies.**—Returns have been received of a total of 167 societies, viz., 85 in New South Wales, 27 in Victoria, 14 in Queensland, 25 in South Australia, 12 in Western Australia, and 4 in Tasmania. The balance-sheets cover various periods ended during the second half of 1910 and the first half of 1911, so that the returns may be assumed to roughly correspond to the financial year 1910-11. The liabilities of the societies are stated as follows:—

## LIABILITIES OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1910-11.

State.	Paid-up Capital or Subscriptions.	Reserve Funds.	Deposits.	Bank Over-drafts and other Liabilities.	Total Liabilities.
	£	£	£	£	£
New South Wales	634,545	81,326	450,025	56,793	1,222,689
Victoria ...	1,162,490	244,761	695,037	256,667	2,358,955
Queensland ...	343,122	24,899	92,430	30,374	490,825
South Australia ...	317,286	4,731	2,126	8,251	332,394
Western Australia	103,853	...	12,969	12,135	128,957
Tasmania ...	94,406	46,884	145,586	10,812	297,688
Commonwealth ...	2,655,702	402,601	1,398,173	375,032	4,831,508

The assets of the companies for the same period were as follows:—

## ASSETS OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1910-11.

State.	Advances on Mortgage.	Landed and House Property, Furniture, etc.	Cash in Hand and on Deposit and other Assets.	Total Assets.
	£	£	£	£
New South Wales ...	1,106,711	65,810	114,054	1,286,575
Victoria ...	1,814,690	456,588	55,133	2,326,411
Queensland ...	461,133	15,336	23,406	499,875
South Australia ...	322,376	6,305	20,739	349,420
Western Australia	120,105	25	8,827	128,957
Tasmania ...	277,084	7,990	12,614	297,688
Commonwealth ...	4,102,099	552,054	234,773	4,888,926

Complete statistical information is furnished in the following table:—

## REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1910-11.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth..
Number of societies ...	85	27	14	25	12	4	167
Number of shareholders ...	*	6,929	3,510	6,230	2,770	2,201	23,640†
Number of shares ...	*	*	569,320	17,108‡	8,072	10,533	605,033‡†
Number of borrowers ...	*	8,653	3,169	2,373	868	1,476	16,539†
Income for year from interest ...	*	128,531	27,431	13,186	§	17,539	186,687†
Working expenses for year ...	*	62,241	6,707	5,631	2,397	3,449	80,425†
Amount of deposits during year ...	*	470,992	53,539	25,774	29,509	43,637	623,451†
Repayment of loans during year ...	*	412,149	140,906	82,947	40,383	60,975	737,360†
Loans granted during year ...	*	291,880	157,543	102,068	25,099	53,863	630,473†

\* Not available. † Exclusive of New South Wales. ‡ Exclusive of New South Wales and Victoria. § Included in repayment of loans.

4. **Registered Co-operative Societies.**—Returns are available of 99 societies, of which 45 were in New South Wales, 39 in Victoria, 4 in Queensland, 7 in South Australia, and 4 in Western Australia. As in the case of Building and Investment Societies, so in the case of Co-operative Societies do the balance-sheets cover various periods ended during the financial year 1910-11. The liabilities of the 99 societies are shewn in the following table:—

## LIABILITIES OF REGISTERED CO-OPERATIVE SOCIETIES, 1910-11.

State.	Paid-up Capital.	Reserve Funds.	Bank Over-drafts and Sundry Creditors.	Other Liabilities, Profit and Loss Account, &c	Total Liabilities.
	£	£	£	£	£
New South Wales ...	121,241	46,851	50,370	16,210	234,672
Victoria ...	121,865	11,080	112,534	39,582	285,061
Queensland ...	4,564	321	2,541	...	7,426
South Australia ...	111,461	8,960	11,897	24,005	156,323
Western Australia ...	7,285	1,472	27,207	24,747	60,711
Commonwealth*	366,416	68,684	204,549	104,544	744,193

\* Exclusive of Tasmania.

The assets of the societies are shewn hereunder:—

## ASSETS OF REGISTERED CO-OPERATIVE SOCIETIES, 1910-11.

State.	Stock and Fittings.	Cash in Hand and Sundry Debtors.	Freehold and other Property and other Assets.	Total Assets.
	£	£	£	£
New South Wales ...	132,609	152,175	...	284,784
Victoria ...	112,361	85,530	99,104	296,995
Queensland ...	5,199	4,750	...	9,949
South Australia ...	80,209	31,779	53,583	165,571
Western Australia ...	50,097	10,601	13	60,711
Commonwealth*	380,475	284,835	152,700	818,010

\* Exclusive of Tasmania.

The following table gives statistical information, as far as available:—

## REGISTERED CO-OPERATIVE SOCIETIES, 1910.

	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of societies on 31st Dec., 1910	45	39	4	7	4	*	99†
Total No. of members on 31st Dec., 1910	*	21,682	11,899	8,852	747	*	42,680†
Total income for year 1910 ... £	*	532,238	8,008	310,982	160,463	*	1,011,691†
Working expenses for year ended 31st December, 1910 ... £	*	85,969	7,712	39,663	169,183	*	302,547†

\* Not available. † Exclusive of Tasmania. ‡ Exclusive of Tasmania and New South Wales.

## § 4. Savings Banks.

1. **General.**—The total number of savings banks, with their branches and agencies, in the Commonwealth, closely approximates to that of banks of issue, and, at the middle of 1911, numbered 1891, distributed as follows:—New South Wales, 662; Victoria, 423; Queensland, 249; South Australia, 257 (exclusive of 186 school penny savings banks); Western Australia, 155 (exclusive of 172 school penny savings banks); and Tasmania, 145.

In the following tables the figures for Victoria, Queensland, South Australia and Western Australia refer to financial years ended 30th June, and those of New South Wales to calendar years ended 31st December next preceding. In the case of Tasmania figures for the two joint-stock savings banks are made up to the last day of February in each year, and those for the Government Savings Bank to the 31st December, except in 1906-7, 1907-8, 1908-9, 1909-10, and 1910-11, where they relate to the year ended 30th June.

2. **Depositors.**—The total number of depositors, *i.e.*, of persons having accounts open, not of those making deposits, in each of the last ten years is shewn in the following table:—

**NUMBER OF DEPOSITORS IN SAVINGS BANKS, 1901-2 to 1910-11.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901-2 ...	306,311	410,126	84,685	132,084	45,108	44,527	1,022,841
1902-3 ...	323,212	418,511	80,043	137,147	48,008	46,451	1,053,372
1903-4 ...	331,956	432,867	80,959	141,572	54,873	47,904	1,090,131
1904-5 ...	355,824	447,382	84,165	146,366	59,764	49,438	1,142,939
1905-6 ...	364,039	466,752	88,026	152,487	63,573	50,731	1,185,608
1906-7 ...	392,050	491,318	92,912	161,855	66,737	53,817	1,258,689
1907-8 ...	421,928	511,581	100,324	*174,289	†72,178	55,620	1,335,920
1908-9 ...	436,029	532,425	106,627	†187,482	§77,748	58,145	1,398,456
1909-10 ...	460,251	560,515	114,720	†201,275	§36,166	60,646	1,483,573
1910-11 ...	498,658	595,424	127,219	†216,480	§99,017	63,314	1,600,112

\* Inclusive of 2011 depositors in school penny savings banks.

†	"	2645	"	"	"	
†	"	4607	"	"	"	in 1909, 6681 in 1910, and 8436 in 1911.
†	"	4590	"	"	"	6781 " " 9578 "

. The subjoined table shews the above figures in relation to the population of the States ; it must, of course, be borne in mind that savings bank accounts are not restricted to the adult population, but that it is, on the contrary, a very usual practice to open accounts in the name of children. Even so, the proportion is a large one, amounting in the case of the Commonwealth to more than one-third, and rising in Victoria to four-ninths, and in South Australia to more than one-half.

**DEPOSITORS IN SAVINGS BANKS PER THOUSAND OF POPULATION, 1901-2 to 1910-11.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901-2 ... ..	223	339	167	363	233	254	267
1902-3 ... ..	231	346	156	379	226	259	272
1903-4 ... ..	233	359	156	392	244	262	278
1904-5 ... ..	244	371	160	403	250	267	288
1905-6 ... ..	245	386	166	416	254	272	294
1906-7 ... ..	258	403	172	437	262	290	308
1907-8 ... ..	270	415	184	462	284	293	321
1908-9 ... ..	275	426	191	481	299	303	330
1909-10 ... ..	285	439	199	508	324	314	343
1910-11 ... ..	303	458	212	528	358	327	362

3. **Administration of Savings Banks.**—The following table, relating to the Government Savings Banks of the several States, gives information on such points as administration, maximum and minimum deposits, rate of interest allowed, investment of funds, etc.

## PARTICULARS RELATING TO

State, Bank and Acts in Force.	Administration and Management.	Appointment of Administrators or Managers.	Payment of Administrators or Managers.	Quorum.	Departments and Branches.	Minimum and Maximum Deposits.
<b>New South Wales</b> <i>Savings Bank of N.S.W.</i> Acts Nos. 53 & 99 of 1902.	Managed by trustees, not exceeding 18, in addition to the Governor as President.	Trustees appointed by Governor, who also nominates the Vice-President. The managing Trustee is appointed by Governor on the nomination of the Trustees.	The managing Trustee is paid out of the funds of the Bank. Other Trustees and district Trustees may not receive emolument.	Four Trustees.	The Trustees may appoint an Accountant for each district for which district Trustees are appointed.	From 1s. to £200.
<i>Government Savings Bank.</i> Act No. 48 of 1906.	Administered, governed, and managed by 3 Commissioners, of whom one is President.	Appointed by the Governor by commission in His Majesty's name; to hold office during ability and good behaviour. Provision to appoint deputies in case of illness, suspension, or absence.	The President is paid £1200 per annum; each of the other Commissioners £900 per annum.	Two Commissioners.	(i.) Savings Bank Department. (ii.) Advances Department. Commissioners may establish branches and agencies; these may be at post-offices, subject to such terms as may be agreed upon between Governor and Governor-General.	(Not specified in Act).
<b>Victoria—</b> <i>The Savings Bank.</i> Acts Nos. 1138 of 1890, 1481 of 1896, 1709 and 1722 of 1900, 1778 of 1901, 1878 of 1903, and 2280 of 1910.	General control of administration and the sole investment of funds in the hands of 5 Commissioners. General management is in hands of Inspector-General.	Commissioners appointed by Governor-in-Council; the Chairman is also appointed annually by the Governor-in-Council on the nomination of a majority of the Commissioners. The Inspector-General is appointed by the Commissioners with the approval of the Governor-in-Council. Commissioners to hold office during good behaviour; provision for appointment of deputy Chief Commissioner in case of illness, etc.	Each Commissioner is paid 2 guineas and the Chief-Commissioner 3 guineas for each attendance, but the amount paid to any one Commissioner must not exceed £210 per annum, nor to the Chief Commissioner, £315 per annum. The salary of the Inspector-General may not exceed £1500 per annum.	Three Commissioners.	(i.) Savings Bank Department. (ii.) Advances Department. Commissioners may establish banks at any place in Victoria; each bank to be a separate and independent institution having separate and distinct Trustees and officers. Trustees (two or more in number) are appointed by Commissioners.	From 1s. to £1000.

## ADMINISTRATION OF SAVINGS BANKS.

Interest.		Management and Investment of Funds.	Loans on Mortgage.	Reserve and other Funds.	Borrowing and Security of Depositors.
Rate.	Amount on which Payable.				
To be fixed from time to time by Trustees.	Any sum over £1, but the Trustees may limit the interest so as not to be payable on the surplus over £100.	The Trustees may (i.) deposit funds either (a) in the Colonial Treasury or (b) in any bank in N.S.W., or (ii.) may invest funds in debentures and other securities, or (iii.) may purchase bills of exchange drawn on any bank in N.S.W. to an amount not exceeding one-quarter of the funds.	Trustees may lend money on mortgage provided (i.) no mortgage to any one person may exceed £24,000, and (ii.) not more than three-fourths of the total deposits may be lent on mortgage. The land must be held in fee-simple and unencumbered.	The Trustees must set aside annually out of the profits such sum, being not less than one-twentieth nor more than one-fifth of the total interest produced during the year, as they think proper, towards the establishment of a security fund, to equalise rate of interest and meet losses or deficiency.	The Trustees may borrow the amount required to meet the demands of depositors and the Governor or may guarantee its repayment. The amount borrowed and outstanding at any time so guaranteed may not exceed £50,000, without the previous consent of the Legislative Assembly. Special loans to meet any sudden demand upon the funds, may be raised upon the security of the property and revenues of the bank.
Commissioners must fix rate of interest, and may fix differential rates according to amount of deposit.	Any sum from £1 to £500, and over the latter amount in case of accounts of (i.) Friendly Societies, etc., and (ii.) the Advance Department.	All moneys received to be invested and held (i.) as to 15% to consist of cash and deposits at Treasury and in banks of issue in N.S.W. available at call or short notice, and (ii.) as to the balance to be invested in business premises of the Commissioners, mortgages, Government securities of any State of the Commonwealth, debentures of the Advance Dept., debentures of any municipality in N.S.W.	Loans may be on first mortgage from £30 to £25,000 to any one person. Any one loan may not exceed three fifths of the value of the interest of the borrower in the lands and buildings. The mortgage must be registered and dates must be fixed for repayment of principal and interest.	Same provisions as above, provided that the Governor may suspend the operations of such provisions.	The Commissioners may borrow, and the Governor may guarantee repayment of moneys required to meet demands of depositors; the Governor shall obtain from Commissioners such security as he may deem necessary. The Governor may, upon like security, direct advances to be made out of Consolidated Revenue. Such advances must be reported to both Houses of Parliament.
To be fixed from time to time by the Commissioners but may not exceed 5 per cent.	Interest allowed on sums from £1 to £250, and is added yearly on 30th June. (Acts provide that interest may not be paid on surplus over £500, or such other less sum as the Commissioners may appoint.)	All deposits must within one week of their receipt be paid into the appointed bank in Melbourne. Deposits in the country banks must be remitted to the Commissioners. Funds must be invested as follows:—(i.) Not more than 15% to be deposited with the Government Bankers. (ii.) Not more than three-tenths of the balance in mortgages or municipal loans. (iii.) As nearly as possible seven-tenths of such balance in Treasury Bills, mortgage bonds, and debentures.	The Commissioners may lend any sum on first mortgage of fee-simple lands, and may lend to corporations of Melbourne or Geelong and to the council of any shire or borough any sums not exceeding in the aggregate the average revenues for the period of three years. The amount lent to any one person is limited to £25,000, and may not exceed three fifths of the value of property mortgaged.	No provision except in regard to Advances Dept.	The Governor with the advice of the Executive Council may guarantee the repayment of any loan necessary to meet the demands of depositors, but the loans outstanding at any time may not exceed £100,000.

## PARTICULARS RELATING TO

State, Bank and Acts in Force.	Administration and Management.	Appointment of Administrators or Managers.	Payment of Administrators or Managers.	Quorum.	Departments and Branches.	Minimum and Maximum Deposits.
<b>Queensland—</b> <i>Government Savings Bank.</i> Acts Nos. 24 of 1853 (N.S.W.), 25 of 1854 (N.S.W.), 8 of 1861, 2 of 1864, 17 of 1865, 10 of 1870, 6 of 1872, 2 of 1882, 31 of 1894, 20 of 1895, 4 of 1896, and 8 of 1897.	Administration controlled by the Colonial Treasurer. The actual management in hands of a "manager."	Appointed by Governor.	Not specified.	...	On the application of ten or more house or landholders, the Governor - in - Council may by a proclamation establish a Savings Bank in any town in Queensland having not less than 500 inhabitants. Police magistrates and other officers may be directed by the Governor - in - Council to receive deposits of not less than 5 shillings.	From 1s. to £200.
<b>South Australia—</b> <i>Government Savings Bank.</i> Acts Nos. 22 of 1875, 824 of 1903, and 925 of 1907.	Managed by 6 Trustees, 2 of whom retire every 2 years.	Appointed by the Governor. Chairmen elected by Trustees. The Board must meet at least once in each week except in the month of December.	Each Trustee is paid 2 guineas for each meeting attended, provided that no Trustee may receive more than one fee for any one week.	Four Trustees.	(i.) Trustees may establish branches at such places in the State as they may select. (ii.) They are also empowered to establish a department designated "The Penny Bank Department."	From 1s. to £500, but deposits of Friendly Societies are unlimited. In the Penny Bank Dept. any sum not less than one penny may be deposited.
<b>Western Australia</b> <i>Government Savings Bank.</i> Act No. 9 of 1906	Managed by a "Manager" under the control of the Treasurer	Appointed by Governor.	Not specified.	...	Governor may arrange with Governor - General for performance of duties in respect of the Savings Bank by officers of the P.M.G.'s Dept. and the Governor may authorise such officers, or any other person, to receive deposits for remittance to the head office.	From 1s. to £1000, but a Friendly Society may in any one year deposit any amount not exceeding £1000.
<b>Tasmania—</b> <i>Government Savings Bank*</i> Act No. 9 of 1910	Managed by an "Actuary" under the control of the Treasurer	Actuary and other officers subject to the Public Service Act.	No provision.	...	Same as W.A.	Not less than 1s. No maximum is specified.

\* There are also the Hobart Savings Bank and the Launceston



## ADMINISTRATION OF SAVINGS BANKS—Continued.

Interest.		Management and Investment of Funds.	Loans on Mortgage.	Reserve and other Funds.	Borrowing and Security of Depositors.
Rate.	Amount on which Payable.				
To be fixed by Governor-in-Council, but not to be more than 5 per cent.	No interest on deposits exceeding £500, except in case of funds of registered Friendly Societies or any other Society or Corporation excepted by the Governor-in-Council.	Deposits must be paid within 24 hours into the appointed bank in Brisbane. (i.) Two-thirds at least of the funds must be invested in Government Debentures or Treasury bills. (ii.) The remaining third to be retained by Colonial Treasurer to carry on business of the Bank. Debentures and bills to vest in President of Legislative Council, Speaker of Legislative Assembly, and the Colonial Treasurer. The Governor may authorise the issue of 3½ per cent. (or less) Savings Bank Stock to an amount up to £2,000,000, redeemable in 1945.	...	...	The Governor may guarantee upon the security of the general revenue of the State the repayment of any money, the loan of which is necessary to meet the demands of depositors. Loans outstanding may not exceed £10,000 without previous consent of the Legislative Council.
To be fixed by Trustees.	No interest on deposits exceeding £250, but in case of Friendly Societies interest at a rate not exceeding one-half the ordinary rate is paid on the surplus over £250.	Funds may be invested in (i.) Government securities of any State or the Commonwealth. (ii.) Securities of any Municipal Corporation in S. A. (iii.) Deposits in any other bank in S. A. (iv.) Deposits in the Treasury.	Trustees may lend money on mortgage of estates in fee-simple, but no new mortgage may be taken by Trustees, so long as one-half of funds of the bank are invested on mortgage.	Trustees may set apart annually any sum not exceeding one-fifth of the net profits to a reserve fund (which may not exceed 4 per cent. of the total deposits) for the purpose of meeting any loss or deficiency. Appropriations may be made from this fund to meet depreciations in the investments. Trustees may also use the fund for purpose of carrying on business of Bank.	...
To be fixed by Governor.	To be fixed by Governor.	All funds, except such portion as the Treasurer deems sufficient to meet withdrawals, must be invested: (i.) On deposits in any bank in W. A. (ii.) In securities of the Government of W. A. (iii.) In debentures issued by any local authority in W. A. (iv.) Upon first mortgages of any lands in W. A.	The aggregate amount invested on mortgage may not exceed one-third of the total of funds; no more than three-fifths of the amount of valuation may be advanced; and the interest must be not less than 5 per cent.	After payment of interest to depositors and of expenses of maintenance and administration, any surplus income forms part of the Consolidated Revenue Fund.	Deposits are charged upon the Consolidated Revenue Fund. If moneys received are not sufficient to meet the lawful claims of depositors the Governor may authorise the issue of the amount of the deficiency out of the Consolidated Revenue Fund.
To be fixed by Governor.	No interest to be paid in excess of deposits over £250.	All funds not required to meet withdrawals must be invested in Tasmanian Government securities or deposited in a bank in Tasmania.	...	After providing for payment of interest due to depositors the surplus income forms part of the Consolidated Revenue.	Same as in W. A.

Bank for Savings, both under control of Trustees.

4. **Deposits.**—The total amount of deposits in the savings banks of the six States reaches the large sum of nearly sixty million pounds, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits. It must be remembered that though not granting him facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, in addition to which they also allow him interest on his minimum monthly balance, instead of charging him a small fee for keeping his account, as the banks of issue do. The rates of interest allowed, and the limits of interest-bearing deposits, are as follows:—New South Wales, Government Savings Bank, 3 per cent. up to £500; Savings Bank of New South Wales, 3½ per cent. up to £200; Victoria, 3½ per cent. on first £100, and 3 per cent. on excess from £101 to £250; Queensland, 3 per cent. up to £500; South Australia, 2½ per cent. on accounts closed during the year, and 3½ per cent. up to £250 on accounts remaining open; Western Australia, 3 per cent. up to £1000; Tasmania, Government Savings Bank, 3 per cent. up to £250; Hobart Trustees' Savings Bank, 4 per cent. up to £50, 3½ per cent. on the excess from £50 to £150; Launceston Trustees' Savings Bank, 3½ per cent. up to £150. The savings banks of four of the States—New South Wales (Government Savings Bank), Victoria, South Australia, and Western Australia—have, for the further benefit of depositors, entered into a reciprocity arrangement, under which money deposited in one State may be drawn out in another State, and even by telegraph.

The table below shews the total amounts at credit of depositors in each of the last ten years:—

#### DEPOSITS IN SAVINGS BANKS, 1901-2 to 1910-11.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901-2 ...	11,808,710	10,131,604	4,118,337	3,988,649	1,889,082	1,092,047	33,028,429
1902-3 ...	12,425,464	10,341,857	3,772,686	4,187,590	1,988,624	1,194,157	33,910,378
1903-4 ...	12,344,623	10,582,808	3,741,967	4,217,836	2,079,763	1,249,760	34,216,757
1904-5 ...	12,982,648	10,896,741	3,875,197	4,398,041	2,207,296	1,263,542	35,623,465
1905-6 ...	13,963,635	11,761,179	4,142,791	4,766,907	2,316,161	1,332,546	38,286,219
1906-7 ...	15,320,532	12,792,590	4,543,104	5,320,872	2,633,135	1,488,056	42,098,289
1907-8 ...	17,530,157	13,428,676	4,921,881	5,820,344	2,885,463	1,560,951	46,147,472
1908-9 ...	18,805,082	14,101,710	5,158,219	6,347,271	3,059,738	1,605,919	49,077,939
1909-10 ...	20,150,574	15,417,888	5,622,986	6,791,320	3,481,764	1,652,966	53,117,498
1910-11 ...	22,453,924	17,274,423	6,376,969	7,435,772	4,092,504	1,760,090	59,393,682

A comparison between the tables shewing the number of depositors and the amount of deposits reveals the fact that the average amounts to the credit of each depositor are considerably larger in some States than in others; in other words, that in one State a comparatively larger proportion of the population makes use of the savings banks, and that the natural result is a smaller amount to the credit of the individual depositor. Within the same State there is little variation in the figures from year to year.

#### AVERAGE AMOUNT PER DEPOSITOR IN SAVINGS BANKS, 1901-2 to 1910-11.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	38 11 0	24 14 1	48 12 7	30 3 11	41 17 7	24 10 6	32 5 10
1902-3 ...	38 8 10	24 14 3	47 2 8	30 10 8	41 8 5	25 14 2	32 3 10
1903-4 ...	37 3 9	24 9 0	46 4 5	29 15 10	37 18 0	26 1 9	31 7 9
1904-5 ...	36 9 9	24 7 2	46 0 10	30 1 0	36 18 8	25 11 2	31 3 4
1905-6 ...	38 7 2	25 4 1	47 1 3	31 5 3	36 8 8	26 5 4	32 5 10
1906-7 ...	39 1 7	26 0 9	48 17 11	32 17 6	39 9 1	27 13 0	33 8 11
1907-8 ...	41 10 11	26 5 0	49 1 2	33 7 11	39 19 6	28 1 4	34 10 10
1908-9 ...	43 11 2	26 9 9	48 7 6	33 17 1	39 7 1	27 12 5	35 4 1
1909-10 ...	43 15 8	27 10 1	49 0 4	33 14 10	40 8 2	27 5 1	35 16 1
1910-11 ...	45 0 7	29 0 3	50 2 6	34 7 0	41 6 7	27 16 0	37 2 4

The average amount deposited per head of population shows a satisfactory increase during the period under review. In 1901-2 it ranged from £10 19s. 2d. in South Australia to £6 4s. 8d. in Tasmania, while in 1910-11 the amount in South Australia had risen to £18 2s. 7d., and in Tasmania to £9 1s. 9d. The following table gives the figures for each year:—

**SAVINGS BANK DEPOSITS PER HEAD OF POPULATION, 1901-2 to 1910-11.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901-2 ...	8 11 8	8 7 6	8 2 6	10 19 2	9 15 2	6 4 8	8 12 8
1902-3 ...	8 17 3	8 11 2	7 7 4	11 11 8	9 7 7	6 13 1	8 15 0
1903-4 ...	8 13 3	8 15 8	7 4 7	11 13 6	9 5 1	6 16 8	8 14 9
1904-5 ...	8 18 5	9 0 9	7 7 8	12 1 11	9 4 5	6 16 6	8 19 3
1905-6 ...	9 7 8	9 14 5	7 15 11	13 0 0	9 5 2	7 3 0	9 9 10
1906-7 ...	10 1 4	10 9 9	8 8 7	14 7 3	10 6 5	8 0 6	10 5 9
1907-8 ...	11 4 6	10 17 10	9 0 4	15 8 5	11 6 9	8 4 8	11 1 9
1908-9 ...	11 17 5	11 5 6	9 5 2	16 6 0	11 15 8	8 7 6	11 11 11
1909-10...	12 9 8	12 1 6	9 14 7	17 2 8	13 2 1	8 11 2	12 5 8
1910-11...	13 13 2	13 5 6	10 12 11	18 2 7	14 15 8	9 1 9	13 8 5

**5. Annual Business.**—The annual volume of business transacted by the Australian savings banks is very large when compared with the total amount of deposits. This is mainly due to the fact already pointed out of many accounts being used as convenient current accounts. Thus, during the last year of the period under review, the total amount deposited and withdrawn (exclusive of interest added) amounted to nearly 150 per cent. of the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased by only 11½ per cent. during the same year. The following table shews the business transacted during the year 1910-11:—

**SAVINGS BANK TRANSACTIONS DURING THE YEAR, 1910-11.**

State.	Total Deposits at End of Year 1909-10.	Amounts Deposited during Year 1910-11.	Interest Added during Year 1910-11.	Total	Amounts Withdrawn during Year 1910-11.	Total Deposits at End of Year 1910-11.
	£	£	£	£	£	£
N.S. Wales ...	20,150,574	15,342,619	619,263	36,112,456	13,658,532	22,453,924
Victoria ...	15,417,888	13,484,759	468,250	29,370,897	12,096,474	17,274,423
Queensland ...	5,622,986	3,691,615	161,596	9,476,197	3,099,228	6,376,969
South Australia ...	6,791,320	4,936,351	222,155	11,949,826	4,514,054	7,435,772
West. Australia ...	3,481,764	3,177,107	104,982	6,763,853	2,671,349	4,092,504
Tasmania ...	1,652,966	937,087	51,031	2,641,084	880,994	1,760,090
Commonwealth	53,117,498	41,569,538	1,627,277	96,314,313	36,920,631	59,393,682

**§ 5. Life Assurance.**

**1. General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to "insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned." With the exception of Act No. 12 of 1905, "an Act relating to assurance on the lives of children by life assurance companies or societies," no legislation relating to life

insurance has been passed by the Commonwealth Parliament, and life assurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies or special Acts. A Royal Commission consisting of the Honourable J. H. Hood, one of the judges of the Supreme Court of Victoria, and G. H. Knibbs, Esquire, Commonwealth Statistician, was, however, appointed in 1908, "to inquire into and report upon the law relating to and the methods of operating Fire, Life, Industrial, and other Insurance in Australia." The Commission was originally required to report the result of its inquiry before the 30th June, 1909. A progress report was issued before that date, and the time for the final report extended to the 30th June, 1910. The report relating to Life Assurance was published on 15th March, 1910, and that relating to Fire Insurance on 15th October, 1910. On the conclusions contained in these reports future Commonwealth legislation will probably be based. In addition to these a report on Social Insurance was prepared by the Commonwealth Statistician and issued on 9th September, 1910.

Returns for the year 1910 have been directly collected from life assurance societies by the Commonwealth Statistician, with results which are in the main satisfactory. Figures for 1910 refer to business in the Commonwealth only, and do not include New Zealand business.

**2. Companies Transacting Business in the Commonwealth.**—The total number of companies at present established in the Commonwealth is fifteen, of which the following five have their head offices in New South Wales:—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the City Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, and the People's Prudential Assurance Company Limited. The Standard Life Association Limited is now omitted, since a controlling interest in it has been purchased by the Colonial Mutual Life Assurance Society, and almost all of its policy-holders have transferred themselves to the latter corporation. The Mutual Life and Citizens' Assurance Company Limited was formed in 1908 by the amalgamation of the Mutual Life Association of Australasia and the Citizens' Life Assurance Company Limited. During 1910 it increased in size by amalgamating with the Australian Widows' Fund Life Assurance Society Limited, which is therefore no longer included in the list of independent corporations. Five companies have their head offices in Victoria, viz.—The Australian Alliance Assurance Company, the National Mutual Life Association of Australasia Limited, the Victoria Life and General Insurance Company, the Colonial Mutual Life Assurance Society Limited, and the Australasian Temperance and General Mutual Life Assurance Society Limited. The head office of the Provident Life Assurance Company is in New Zealand, and that of the Liverpool and London and Globe Insurance Company in England. The remaining three societies belong to the United States, viz.—The Equitable Life Insurance Society of the United States, the Mutual Life Insurance Company of New York, and the New York Life Insurance Company.

Most of the Australian companies are purely mutual; the Victoria Life and General (which takes no new life business), the Mutual Life and Citizens', the Metropolitan, and the Prudential, are the only companies which are partly proprietary, the shareholders' capital amounting to £40,000, £56,788, £11,740 and £4791 respectively. Of foreign companies transacting business in the Commonwealth, the Liverpool and London and Globe, the Provident, and the Equitable are partly proprietary, the shareholders' capital amounting to £245,640, £10,000 and £20,550 respectively.

**3. Ordinary and Industrial Business.**—Of the societies enumerated in the preceding paragraph the following five in 1910 transacted both ordinary and industrial business:—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the Australasian Temperance and General Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, and the Colonial Mutual Life Assurance Society.

The People's Prudential Assurance Company Limited and the Provident Life Assurance Company formerly restricted their operations to industrial business, but have now established an ordinary department.

The remaining nine societies transacted ordinary life assurance business only, with the exception of those companies which have fire and accident branches, etc.

It has been attempted in this section to keep returns relating to ordinary and to industrial business apart, so far as it is possible to do so, and figures relating to companies whose head offices are in New Zealand or in Europe or America refer to the Australian business only of those companies.

**4. Ordinary Business: Australian Business in Force, 1910.**—The subjoined table shews the ordinary life business in force at the latest dates available in the fifteen societies conducting operations in the Commonwealth:—

#### ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1910.

Society.	Policies in force, exclusive of Annuities.	Amount Assured, exclusive of Bonus Addition, etc.	Annual Premium Income, exclusive of Annuities.
	No.	£	£
Australian Mutual Provident Society ...	202,976	55,655,703	1,809,903
Mutual Life and Citizens' Assurance Company Limited ...	91,589	16,240,981	525,322
City Mutual Life Assurance Society ...	17,852	2,435,454	93,759
Australian Metropolitan Life Assurance Company ...	2,554	239,865	10,507
Australian Alliance Assurance Company ...	524	177,927	4,724
National Mutual Life Association of Australasia ...	65,250	14,175,567	502,129
Victoria Life and General Insurance Company ...	133	89,248	1,796
Colonial Mutual Life Assurance Society ...	28,381	5,032,680	171,901
People's Prudential ...	2,742	139,955	18,651*
Australasian Temperance & General Mutual Life Assurance Society ...	33,617	3,444,156	123,231
Liverpool and London and Globe Insurance Company (Life Branch) ...	330	155,613	4,681
Provident Life ...	79	11,578	348
Equitable Life Assurance Society of United States ...	6,606	2,298,179	94,963
Mutual Life Insurance Company of New York ...	4,121	1,602,582	53,531
New York Life Insurance Company ...	5,769	2,211,868	77,574

\* Including industrial.

**5. Industrial Business: Australian Business in Force, 1910.**—Similar information in regard to the industrial business of the seven societies transacting that kind of business is given in the following table:—

#### INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1910.

Society	Policies in Force.	Amount Assured.	Annual Premium Income.
	No.	£	£
Australian Mutual Provident Society ...	46,849	1,506,799	80,720
Mutual Life and Citizens' Assurance Company ...	208,755	3,822,170	188,257
Australian Metropolitan Life Assurance Company ...	16,049	340,051	18,961
Colonial Mutual Life Assurance Society ...	38,023	948,032	51,683
People's Prudential Assurance Company ...	4,892	99,168	*
Aust. Temperance and General Mutual Life Ass. Society ...	109,570	2,168,722	130,399
Provident Life Assurance Company ...	3,737	92,376	4,093

\* Included in ordinary.

6. **Receipts and Expenditure of Insurance Societies, 1910.**—(i.) *Ordinary Business.* The following returns refer to the Australian business of all societies doing business in the Commonwealth. The People's Prudential Assurance Company, whose accounts do not distinguish between revenue and expenditure on account of ordinary and industrial business, has been included among the companies doing industrial business.

**ORDINARY LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1910.**

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society ...	2,824,749	1,799,981	1,024,768
Mutual Life and Citizens' Assurance Company ...	749,607	470,138	279,469
City Mutual Life Assurance Society ...	135,297	89,410	45,887
Australian Metropolitan Life Assurance Company ...	11,351	6,156	5,195
Australian Alliance Assurance Company ...	12,582	24,214	11,632*
National Mutual Life Association of Australasia ...	747,847	595,086	152,761
Victoria Life and General Insurance Company ...	10,252	25,089	14,837*
Colonial Mutual Life Assurance Society ...	265,313	202,703	62,610
Aust. Temperance & General Mutual Life Ass. Socy.	154,860	87,357	67,503
Liverpool and London and Globe (Life Branch) ...	4,681	27,638	22,957*
Provident Life ...	348	142	206
Equitable Life Assurance Society ...	116,889	139,570	22,681*
Mutual Life Insurance Company of New York ...	69,140	83,152	14,012*
New York Life Insurance Company ...	83,568	65,218	18,350

\* Decrease.

(ii.) *Industrial Business.* A similar return for those societies which transact industrial business is given below. The figures for the Prudential, as stated above, are included therein.

**INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1910.**

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds)
	£	£	£
Australian Mutual Provident Society ...	84,226	44,636	39,590
Mutual Life and Citizens' Assurance Company ...	220,708	162,698	58,010
Australian Metropolitan Life Assurance Company ...	19,928	18,278	1,650
Colonial Mutual ...	51,847	22,525	29,322
People's Prudential Assurance Company ...	19,586	16,734	2,852
Aust. Temperance & General Mutual Life Ass. Soc.	144,071	95,658	48,413
Provident Life Assurance Company ...	4,268	5,608	1,340*

\* Decrease.

7. **Expenses of Management of Insurance Societies, 1910.**—(i.) *Ordinary Business.* In the following table the expenses of management (including commission, expenses of management, license fees, and taxes) of the several societies transacting ordinary life

business are shewn, together with the proportion these expenses bear to premium income and to gross receipts. The People's Prudential Company is included amongst the industrial companies in a subsequent table, as that company transacts mainly industrial business, and as its returns include both ordinary and industrial business.

### ORDINARY LIFE ASSURANCE.—EXPENSES OF MANAGEMENT IN AUSTRALIA, 1910.

Society.	Expenses of Management.	Proportion to Premium Receipts.	Proportion to Gross Receipts.
	£	%	%
Australian Mutual Provident Society...	225,681	12.17	7.99
Mutual Life and Citizens' Assurance Company ...	63,914	12.13	8.53
City Mutual Life Assurance Society ...	28,961	30.50	21.41
Australian Metropolitan Life Assurance Company ...	3,919	37.30	34.52
Australian Alliance Assurance Company ...	2,655	56.20	21.10
National Mutual Life Association of Australasia ...	88,707	17.06	11.86
Victoria Life and General Insurance Company ...	1,185	65.98	11.56
Colonial Mutual Life Assurance Society ...	66,275	38.14	24.98
Australasian Temperance & General Mutual Life Assurance Society ...	35,197	27.45	22.73
Liverpool and London and Globe (Life Branch) ...	115	33.05	33.05
Provident Life ...	4,600	4.84	3.94
Equitable Life Assurance Company ...	5,971	10.77	8.64
Mutual Life Insurance Society of New York ...	7,186	9.26	8.60
New York Life Insurance Society ...			

\* Not available

(ii.) *Industrial Business.* The Australasian assurance societies have, in common with assurance societies elsewhere, found by experience that industrial business is much more expensive than ordinary business. This is, of course, principally due to the great expenses in connection with collection and commission. The subjoined table shews particulars in regard to this business, the figures again including commission, expenses of management, license fees, and taxes:—

### INDUSTRIAL LIFE ASSURANCE.—EXPENSES OF MANAGEMENT IN AUSTRALIA, 1910.

Society.	Expenses of Management.	Proportion to Premium Receipts.	Proportion to Gross Receipts.
	£	%	%
Australian Mutual Provident Society ...	40,964	50.75	48.64
Mutual Life and Citizens' Assurance Company ...	89,151	47.36	40.39
Australian Metropolitan Life Assurance Company ...	14,781	77.95	74.17
Colonial Mutual ...	19,062	36.88	36.77
People's Prudential Assurance Company* ...	13,516	72.47	69.01
Aust. Temperance & General Mutual Life Ass. Socy. ...	46,755	35.86	32.45
Provident Life Assurance Company ...	806	19.69	18.88

\* Including ordinary business.

8. *Liabilities and Assets of Insurance Societies, 1910.*—The liabilities of the Australasian societies consist mainly of their assurance funds; as already mentioned, only five of the societies are partly proprietary, viz., the Mutual Life and Citizens', with a paid-up

capital of £56,788; the Metropolitan, with a paid-up capital of £11,740; the Prudential, with a paid-up capital of £4791; the Victoria Life and General, with a paid-up capital of £40,000; and the Provident, with a paid-up capital of £10,000. With the exception of the Victoria Life and General, this paid-up capital belongs in every case to the industrial branch of the respective societies. The capital of the Provident (£10,000) is held in New Zealand, that of the Liverpool and London and Globe (£245,640) in England, and that of the Equitable Life (£20,550) in the United States. Neither of these three amounts appears, therefore, in the two subjoined tables where the capital of the Australian societies is included with the assurance funds. The assets consist mainly of loans on mortgage and policies, Government, municipal, and similar securities, shares, freehold property, etc. As in some cases the Australian liabilities exceed the Australian assets it may be pointed out that this table should be taken in connection with the table on page 875, which sets out the total liabilities and assets. Loans on personal security are granted by only very few of the Australian societies.

(i.) *Ordinary Business.* The following table shews the liabilities and assets of the societies transacting ordinary life business:—

**ORDINARY LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1910.**

Society	Liabilities.			Assets.†		
	Total Funds including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total
	£	£	£	£	£	£
Australian Mutual Provident Society* ...	22,052,568	284,606	22,337,174	11,445,192	8,566,947	20,012,139
Mutual Life and Citizens' Assurance Co. ...	5,127,421	58,550	5,185,971	2,591,368	3,052,135	5,643,503
City Mutual Life Assurance Society ...	476,758	14,967	491,725	280,154	211,571	491,725
Australian Metropolitan Life Assurance Co.	31,917	6,563	38,480	972	37,508	38,480
Australasian Alliance Assurance Company	170,109	6,627	176,736	112,551	64,185	176,736
National Mut. Life Assoc. of Australasia ...	5,010,780	72,951	5,083,731	3,353,381	1,730,350	5,083,731
Victoria Life and General Insurance Co. ...	203,010	19,708	222,718	57,653	164,789	222,442
Colonial Mutual Life Assurance Society ...	2,406,070	18,408	2,424,478	1,329,626	1,094,852	2,424,478
Aust. Temp. & Gen. Mut. Life Assur. Soc.*	936,090	61,864	997,954	362,968	634,986	997,954
Liverpool & London & Globe (Life Branch)	†	†	†	†	†	†
Provident Life ...	299	...	299	...	220	220
Equitable Life Assurance Society ...	209,693	164	209,857	146,252	397,537	543,789
Mutual Life Insurance Society of New York	†	†	†	83,992	186,467	270,459
New York Life Insurance Society ...	743,000	6,117	749,117	96,735	27,352	124,087

\* Including industrial business. As the business of these two societies is mainly ordinary life business they have been included in this table. † Not available. ‡ Several life offices have a considerable portion of their assets invested outside the Commonwealth (see table on page 875).

(ii.) *Industrial Business.* As stated in the footnote to the preceding table, the Australian Mutual Provident Society and the Australasian Temperance and General Mutual Life Assurance Society, which transact a certain amount of industrial business, but whose business is mainly ordinary life business, have been included with those societies doing only ordinary life business. On the other hand, the People's Prudential Assurance Company, in whose case industrial business greatly predominates over ordinary life business, has been included in the following table. Incomplete as the table is, it shews that the funds appropriated to industrial business are very insignificant in comparison with those pertaining to ordinary life business. Taking the table in conjunction with the statements of revenue and expenditure, the question may well be asked whether in the case of some of the societies industrial business is worth catering for at all.



## INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1910.

Society.	Liabilities.			Assets.		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Mutual Life & Citizens' Assurance Company	783,893	40,590	824,483	542,313	310,411	852,724
Australian Metropolitan Life Assurance Co.	34,644	589	35,233	816	34,417	35,233
Colonial Mutual	51,517	30,515	82,032	1,224	80,808	82,032
People's Prudential Assurance Company*	24,390	152	24,542	11,751	12,791	24,542
Provident Life Assurance Company	3,101	...	3,101	...	5,592	5,592

\* Including ordinary business.

(iii.) *Total Liabilities and Assets.* It has been thought advisable to confine the figures relating to life assurance to business in the Commonwealth. Several of the companies whose head offices are in Australia transact, however, a large amount of business elsewhere, viz., in New Zealand, in South Africa, and in the United Kingdom, while in the case of the foreign companies, the Australian business is insignificant compared with that done elsewhere. Particulars as to this foreign business of both Australian and foreign companies will be found in "Finance Bulletin, No. 5," and a short table only is inserted here, shewing the total liabilities and assets (which balance in every case) of the various companies, so that the deficiencies in the Australian assets shewn in the previous tables for those companies doing business elsewhere may not be misunderstood:—

## TOTAL LIABILITIES AND ASSETS OF INSURANCE COMPANIES, 1910.

Society.	Liabilities and Assets.	Society.	Liabilities and Assets.
ORDINARY BUSINESS.			£
*Australian Mutual Provident Soc. ....	27,425,435	Provident Life	13,572
Mutual Life and Citizens' Assur. Co. ....	6,360,514	Equitable Life Assurance Society ...	100,207,848
City Mutual Life Assurance Society ...	491,725	Mutual Life Ins. Society of New York	117,630,198
Aust. Metropolitan Life Assur. Co. ....	38,480	New York Life Insurance Society ...	131,085,241
Australian Alliance Assurance Co. ....	176,736	INDUSTRIAL BUSINESS.	
National Mutual Life Association ...	6,368,740	Mutual Life and Citizens' Assur. Co.	892,789
Victoria Life and General Insur. Co. ....	222,718	Aust. Metropolitan Life Assur. Co. ....	35,233
Colonial Mutual Life Assurance Soc. ....	3,260,783	Colonial Mutual Life Assurance Soc. ....	89,277
*Aust. Temp. & Gen. Mut. Life A. Soc. ....	1,086,944	†People's Prudential Assurance Co. ....	†24,542
Liverpool & London & Globe (Life) ...	11,523,395	Provident Life Assurance Company	41,083

\* Including industrial business.

† Including ordinary business.

## § 6. Fire Insurance.

1. **General.**—Returns as to fire insurance are very defective, and only for Sydney and Melbourne and the country districts of Victoria have some figures been given which are worth reproducing. The Royal Commission mentioned above under "Life Assurance" has reported upon fire insurance matters, and Commonwealth legislation may, therefore, be expected at an early date.

2. **Sydney.**—Under the Fire Brigades Act 1902 the cost of the Metropolitan Fire Brigade is defrayed by equal payments on the part of the Colonial Treasurer, the municipal councils within the area under the jurisdiction of the Fire Brigades Board, and the insurance companies represented in Sydney. The companies divide their share proportionately to the amount held at risk. Under this arrangement the amount payable by the companies for the year 1909 was £19,100, divided amongst sixty-five companies, of which not more than six had their head office in Sydney. The amounts thus held at

risk at the close of the last four years for which returns are available were, in 1905, £78,108,749; in 1906, £81,364,129; in 1907, £86,563,304; and in 1908, £89,071,992. A new Act, which came into force on the 1st January, 1910, was passed in 1909. This Act substituted a Board of Fire Commissioners for New South Wales for the present Metropolitan Fire Brigades Board, and divides the whole State into eight fire districts for the greater facilitation of working.

3. **Melbourne.**—In Melbourne the Metropolitan Fire Brigades Board assesses the amount payable by the insurance companies on the amount of premiums returned. These premiums for the last four years averaged about £300,000 per annum, while the contributions paid by the companies amounted to about £13,000, or about £4 6s. 8d. for every £100 of premiums. It may be said, therefore, that the companies have to devote about  $4\frac{1}{2}$  per cent. of their premium income from metropolitan insurances to the maintenance of the fire brigade.

The annual value of ratable property is nearly £5,500,000, and the amounts contributed by the municipalities—as in the case of the insurance companies, one-third of the amount required by the Fire Brigades Board, the remaining one-third being contributed by the State Treasurer—are equal to about  $\frac{1}{2}$ d. per £1 of ratable value. In addition to this contribution insurance companies doing business in Victoria have to take out an annual license at a cost of  $1\frac{1}{2}$  per cent. of the gross premium income, which is probably equal to about  $1\frac{3}{4}$  per cent. on net income.

4. **Country Districts of Victoria.**—The country districts are divided into nine areas for fire insurance purposes, and the contributions to be paid vary in these areas according to the actual requirements of the Country Fire Brigades Board. The annual values of ratable property for the last four years were slightly over £1,500,000. The premium income of the insurance companies from country business during the year 1910 was about £167,000, and the contributions of the companies £4250, equal to about  $2\frac{1}{2}$  per cent. of the premium income.

5. **Brisbane.**—A similar arrangement holds good in Brisbane, under which the cost of the Fire Brigade Board, amounting to about £6000 per annum, is paid in equal shares by the Government, the Brisbane City Council, and the insurance companies.

6. **Adelaide.**—The Fire Brigades Board of South Australia is incorporated under "The Fire Brigades Act 1904"; "The Fire Brigades Act Amendment Act 1905"; and "The Fire Brigades Act Further Amendment Act 1910." The cost is distributed as follows:—Three-ninths to the Government; four-ninths to the insurance companies; and two-ninths to the municipalities and districts which come under the operations of the board. The insurance companies are assessed in proportion to that portion of their premium incomes derived from the insurance of property (re-insurance within the State excepted) situated within the limits of the municipalities and districts coming under the operations of the board. The respective contributions for 1910 were as follows:—The Government, £6942; the companies, £9256; the municipalities, £4628.

7. **Perth.**—A District Fire Brigades Bill was reported on by a committee of the Legislative Assembly during 1909, and it was recommended that all brigades should in future be controlled by one board, and that the expense should be met by contributions at the following rate:—By Government, two-eighths; by the municipalities, three-eighths; and by the Insurance companies, three-eighths. These provisions were incorporated in an Act, "The District Fire Brigades Act 1909," which was assented to on 21st December, 1909, and came into force on the 1st day of January, 1910. This Act, however, does not apply to Perth or the other districts in which the Fire Brigades Act 1898 is still operative. According to the provisions of the latter Act the expenditure is allocated as follows:—One-ninth to the Government; four-ninths to the insurance companies; and four-ninths to the municipalities. It is provided that the Governor may, at any time, on the petition of the council of any municipality, declare by proclamation that the provisions of the Act of 1898 shall cease to be in force in that municipal district.

**8. Australian Insurance Business.**—Returns are available shewing the revenue and expenditure, assets and liabilities, and investments of sixteen insurance companies having their head offices either in the Commonwealth or in New Zealand. These companies are:—(a) with head-office in Sydney—the Australian Mutual Fire Insurance Company, the City Mutual Fire Insurance Company, the Mercantile Mutual Fire Insurance Company, the Queensland Insurance Company Limited, and the United Insurance Company; (b) with head-office in Melbourne—the Australian Alliance Assurance Company, the Colonial Mutual Fire Insurance Company, the Commonwealth Insurance Company Limited, the Victoria Insurance Company, and the Victoria General Insurance and Guarantee Company Limited; (c) with head-office in Hobart—the Derwent and Tamar Fire and Marine Assurance Company Limited; (d) with head-office in Launceston—the Mutual Fire Insurance Company of Tasmania; (e) with head-office in Auckland—the New Zealand Insurance Company, and the South British Fire and Marine Insurance Company of New Zealand; and (f) with head-office in Dunedin—the National Fire and Marine Insurance Company of New Zealand, and the Standard Fire and Marine Insurance Company of New Zealand. As their names imply, the majority of these companies transact marine insurance and in some cases guarantee and other business in addition to fire insurance business, and the returns relating to the latter cannot be separated from the former.

The accounts cover two periods of one year, the second year ending at various dates from 30th June, 1910, to 31st March, 1911. The figures for the first year are put in brackets.

The premiums, less reinsurances and returns, amounted to £1,861,915 (£1,799,303); losses were £1,018,987 (£1,064,464). Expenses and commission came to £624,540 (£603,572), and there was, therefore, a profit on trade operations of £218,388 (£131,267). As, however, interest, rent, fees, etc., amounted to £152,214 (£147,803), the total profit was £370,602 (£279,070). Dividends and bonuses came to £198,476 (£175,179). The ratio to premium income of losses was, therefore, 54.73 per cent. (59.16 per cent.), ranging from 28.81 per cent. to 74.25 per cent.; and of expenses and commissions, 33.54 per cent. (33.54 per cent.). The resulting ratio of trade surplus to premium income was 11.73 per cent. (7.30 per cent.).

The paid-up capital of the sixteen companies was £1,310,347 (£1,295,347); reserve and reinsurance funds, £2,176,027 (£2,041,435); undivided profits, £177,781 (£150,346). The total paid-up capital and reserves were, therefore, £3,664,155 (£3,487,128). In addition to these liabilities there were others, viz.:—Unsettled losses, £191,918 (£183,940); sundry creditors, £155,918 (£126,853); dividend to pay, £125,887 (£115,672); and, in the case of one company, a life assurance fund, £170,109 (£181,741), thus bringing the total liabilities to shareholders and to the general public up to £4,307,987 (£4,095,334).

The corresponding amount of assets is made up of investments, £3,738,341 (£3,556,645), viz.:—Loans on mortgage, £1,141,440 (£1,097,196); Government securities, debentures, shares, etc., £1,038,897 (£1,016,244); landed and other property, including furniture, £799,123 (£763,931); fixed deposits, £652,935 (£577,751); in the case of one company doing a mixed business—loans on its own life policies, etc., £15,055 (£15,338); other investments, £91,891 (£86,185). The balance of assets consisted of cash in bank, on hand, and bills receivable, £176,438 (£171,082); and sundry debtors, etc., £357,100 (£367,607).

The financial position of the companies is undoubtedly a strong one, owing to the steady accumulation of reserves, and the high ratio borne by capital and reserves to premium income must be a cause of satisfaction to policyholders.

## § 7. Marine Insurance.

No returns are available in regard to Marine Insurance. It may, however, be stated that the Commonwealth Parliament in 1909 passed an Act (No. 11 of 1909, An Act relating to Marine Insurance) which was assented to on the 11th November, 1909. This

Act materially alters some of the conditions under which marine policies have heretofore been issued.

## § 8. Friendly Societies.

1. **General.**—Friendly societies are an important factor in the social life of the community, as probably nearly one-third of the total population of the Commonwealth comes either directly or indirectly under their influence. Their total membership is about 400,000, but as certain benefits, such as medical attendance and free medicine and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by four at the least to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its rules are conformable to the law, and that the scale of contributions is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and elaborate reports are published in most of the States dealing with the returns thus received.

In the following tables the figures refer to the year 1910, except those for South Australia, which refer to 1906.

2. **Number of Societies, Lodges, and Members.**—The total number of societies registered in New South Wales is 64; in Victoria, 48; in Queensland, 16; in South Australia, 16; in Western Australia, 17; and in Tasmania, 11. No total is given of these figures for the Commonwealth, as the societies shewn in one State are in most cases represented in all the other States. The number of different lodges, the total number of benefit members at the end of the year, and their average number during the year are shewn in the following table:—

FRIENDLY SOCIETIES.—LODGES AND MEMBERS, 31st DECEMBER, 1910.\*

State.	Number of Lodges.	Benefit Members at End of Year.	Average No. of Benefit Members during Year.
New South Wales ... ..	1,659	130,406	121,811
Victoria ... ..	1,475	142,275	139,308
Queensland ... ..	489	42,246	41,069
South Australia ... ..	506	52,165	51,226
Western Australia ... ..	262	16,397	16,220
Tasmania ... ..	173	21,063	20,602
Commonwealth ... ..	4,564	404,552	390,236

\* See, however, paragraph 1, above.

3. **Sickness and Death.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shews the total number of members who received sick pay during the year, the number of weeks for which they received pay in the

aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members:—

## FRIENDLY SOCIETIES.—SICKNESS AND DEATH, 1910.\*

State.	Number of Members who received Sick Pay.	Total Number of weeks Sick Pay granted.	Average No. of weeks per Member sick.	Deaths of Benefit Members and Wives.	Proportion of Deaths to 1000 average Benefit Members.
New South Wales	26,743	163,887	6.13	910	7.47
Victoria ...	27,740	214,026	7.72	1,631	11.71
Queensland ...	7,460	43,079	5.77	278	6.77
South Australia ...	8,851	84,707	9.57	698	13.63
Western Australia	2,462	13,261	5.39	102	6.23
Tasmania ...	4,210	22,703	5.39	147	7.14
Commonwealth	77,466	541,663	6.99	3,766	9.65

\* See, however, paragraph 1.

4. **Revenue and Expenditure.**—The financial returns are not made up in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings:—

## FRIENDLY SOCIETIES.—REVENUE, 1910.\*

State.	Entrance Fees.	Members' Contributions.	Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
	£	£	£	£	£	£
New South Wales	†	372,125	†	59,312	32,561	463,998
Victoria ...	2,973	402,911	†	81,701	47,031	534,616
Queensland ...	†	136,646	†	19,965	...	156,611
South Australia ...	1,535	122,643	§	29,464	†59,227	212,869
Western Australia	1,175	44,869	1,175	7,901	23,603	83,723
Tasmania ...	1,009	68,479	†	6,692	10,535	86,715
Commonwealth	1,155,540			205,035	177,957	1,538,532

\* See, however, paragraph 1. † Included under "Members' contributions." ‡ Including Levies. § Included under "All other income."

The returns relating to expenditure are more complete than those relating to revenue, and can be shewn in full for every State. The figures shew that the excess of revenue, amounting in the aggregate to £286,649, was divided amongst the six States as follows:—New South Wales, £84,316; Victoria, £110,185; Queensland, £43,062; South Australia, £23,101; Western Australia, £16,201; and Tasmania, £9784. The revenue exceeded the expenditure by about fourteen shillings and ninepence per average benefit member, a margin which cannot be called very large.

## FRIENDLY SOCIETIES.—EXPENDITURE, 1910.\*

State.	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members & Members' Wives.	Administration.	All other Expenditure.	Total Expenditure.
	£	£	£	£	£	£
New South Wales	124,789	128,627	25,424	54,170	46,672	379,682
Victoria ...	146,351	142,365	28,463	69,263	37,989	424,431
Queensland ...	32,452	47,291	11,234	22,572	†	113,549
South Australia ...	49,370	27,130	24,325	33,545	55,398	189,768
Western Australia	10,865	16,755	2,007	11,497	26,398	67,522
Tasmania ...	18,065	18,420	13,959	9,618	16,869	76,931
Commonwealth	381,892	380,588	105,412	200,665	183,326	1,251,883

\* See, however, paragraph 1. † Included in "Administration."

It appears from the above figures that sick pay averaged about fourteen shillings and one penny per week, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to about nineteen shillings and sixpence per average benefit member, or to nearly £4 15s. per member who received sick pay during the year. Funeral expenses averaged £27 1s. 11d. per death of a member or wife of a member during the year, but this average also must be taken for what it is worth, as the funeral expenses allowed in the case of the death of a member are generally much higher than those allowed in the case of the death of a member's wife.

5. **Funds.**—The two foregoing tables shew that the surplus of revenue over expenditure amounted to £286,649 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and the subjoined table shews for all of the six States the division into invested and uninvested funds :—

## FRIENDLY SOCIETIES.—FUNDS, 31st DECEMBER, 1910.\*

State.	Invested Funds.	Uninvested Funds.	Total Funds.
	£	£	£
New South Wales ...	1,341,531	78,164	1,419,695
Victoria ...	2,017,812	104,790	2,122,602
Queensland ...	520,964	25,466	546,430
South Australia ...	714,719	29,076	743,795
Western Australia ...	147,665	10,902	158,567
Tasmania...	185,023	13,056	198,079
Commonwealth ...	4,927,714	261,454	5,189,168

\* See, however, paragraph 1.

The total funds amounted, therefore, to £12 16s. 6d. per member at the close of the year under review.

# § 9. Probates.

1. Number of Probates and Letters of Administration and Value of Estates.—The value of the estates left by deceased persons gives a fair view of the distribution of property among the general population. There occurred in 1910 the deaths of 31,119 adult persons, while the total number of probates and letters of administration granted during the same period was 10,156. It would therefore appear that about one in every three adults who died during the year was possessed of sufficient property to necessitate the taking out of probate. The details for each State are shewn in the table hereunder:—

## PROBATES AND LETTERS OF ADMINISTRATION, 1910.

State	Number of Estates.			Value of Estates.		
	Probates.	Letters of Administration.	Total.	Probate	Letters of Administration.	Total.
				£	£	£
New South Wales	2,261	1,075	3,336	7,649,944	1,184,990	8,834,934
Victoria ...	2,864	1,264	4,128	7,430,949	*	7,430,949
Queensland ...	518	186	704	1,516,037	136,654	1,652,691
South Australia ...	876	245	1,121	2,186,350	236,169	2,422,519
Western Australia	290	202	492	728,251	140,387	868,638
Tasmania ...	302	73	375	712,824	84,615	797,439
Commonwealth	7,111	3,045	10,156	20,224,355	1,782,815	22,007,170

\* Included with Probates.

In addition to the foregoing, intestate estates to the value of £125,571 were placed under the control of the Curator during the year, and £26,894 unclaimed money paid into Consolidated Revenue. The details for each State are shewn hereunder:—

## INTESTATE ESTATES, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
Intestate estates placed under control of Curator during 1910							
Number ...	625	275	539	196	304	100	2,039
Value ... £	40,181	21,470	18,938	23,948	11,716	9,318	125,571
Unclaimed money paid into consolidated revenue by curator during 1910 ... £	5,693	11,713	6,445	1,891	962	190	26,894

This would make the average value of each estate £2167, and the average value of property left by each adult who died in 1910, £707.

2. **Private Wealth.**—The probate figures have sometimes been used as a means for estimating the private wealth of a country. There are, however, many reasons why no reliance can be placed on such estimates. Generally, estates under a certain minimum value do not require to pass through the probate office. Settlements and deeds of gift, although liable to probate duty, occasionally evade detection. The falling in of several, or even of one very large estate, may vitiate the figures not only of one year but of a series of years. All these errors can, however, be more or less guarded against, while the assumption that each adult living is possessed of the same average amount of property as each adult who died during the year or during a series of years, an assumption on which the whole calculation is based, remains. But as it is certain that the accumulated wealth of an individual generally advances with age, and is probably in most cases greater at death than at any previous period, it will be seen that the results obtained by such a calculation must be unduly inflated. If the calculation were made for the Commonwealth and based on the figures of 1910 it would shew the average property of each adult to be £707, and of the 2,500,000 adults, which were approximately included in the population of the Commonwealth at the end of 1910, about £1,770,000,000, an estimate probably considerably in excess of the truth. .



## SECTION XXII.

## PUBLIC INSTRUCTION.

## § 1. Evolution of Primary Education in Australia.

1. *Primary Systems of the States.*—(i.) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian education should have had its beginning in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part, and has had practically a dominating influence. For that reason an account of the evolution of education in this State contains, as it were, the key to the understanding of the Australian attitude to this question. The subject is dealt with in some detail in No. I. and No. II. issues of the Commonwealth Official Year Book, but it is not proposed to repeat it in the present volume.

(ii.) *Primary Systems of other Commonwealth States.* A more or less detailed account of the origin and development of the primary educational systems of the other States also appears in No. I. and No. II. issues of the Year Book.

(iii.) *Present Position of Primary Education in Australia.* Throughout Australia primary education is compulsory and free, while there exists in most of the States a liberal provision of scholarships and bursaries to the Higher State Schools, to the Secondary Schools, and to the Universities.<sup>1</sup> Provided that the requisite standard is reached, it is of course permissible for children to receive home tuition, or to attend so-called private schools. Considerable interest is taken in educational matters by the people of the Commonwealth, and within the last few years several of the States have sent qualified representatives to inspect and report on the methods adopted in the chief countries of Europe and America. The reports of these Commissioners, especially those of New South Wales, have been widely studied, and various improvements have been made in accordance with their recommendations. The orientation, lighting, and ventilation of school buildings are being modernised. In all of the States periodical medical inspection of the children is in force. (A detailed statement of the work being done in this direction will be found in the chapter dealing with Public Hygiene.) Methods of training teachers are now better developed, and although the "pupil teacher" system and its effects have not been wholly eliminated, it appears to be in process of evanishing. The methods adopted in the various States for the selection and training of teachers are described in some detail in § 2, par. 10, hereinafter. There has been a wider employment of kindergarten principles in the early stages, and the more or less purely abstract teaching of the older days has been largely replaced by concrete methods. Such subjects as nature study, manual training, music, and drawing have received a general impetus. Greater attention has been given to the scientific classification of pupils. Lastly, the system of inspection has been considerably remodelled. Under the old system, the inspector was little more than an examining officer, but, under the present régime, the primary duty of these officers consists in guiding and directing the teaching in accordance with approved methods.

(iv.) *Co-ordination of Educational Activities.* Although as pointed out in (iii.) the primary systems may be considered as fairly well organised, there is still need for a

1. Universities have been in existence for some time in New South Wales, Victoria, South Australia, and Tasmania. The University of Queensland was opened in March, 1911, and a University will shortly be founded in Western Australia.

more effective co-ordination of the entire educational activities of the States. At the present time, the brighter pupils from the State Schools may, through the medium of an excellent scheme of scholarships and bursaries, gain entrance to the Secondary Schools and to the Universities, but the average boy or girl simply leaves the State School at the age of fourteen or thereabouts, and in most cases the State no longer concerns itself with their further educational advancement. A small proportion attends evening schools or technical classes, others persevere in private study, but many make no further attempt at progress. The natural disadvantage of this condition of affairs has been recognised, and efforts have been made to meet it by providing additional evening schools, extending the facilities for technical instruction, arranging for University extension lectures, etc. It may be noted further, that, while the bulk of the primary education and the whole of the University education is under the control of the State, intermediate secondary education is largely in private hands. There are, of course, some excellent State Higher Schools, together with semi-private subsidised Grammar Schools, but a fully co-ordinated scheme of public education has yet to be created. The various Departments of Public Instruction are virtually departments controlling primary education, though they are associated more or less with the Universities and with technical education. In some of the States, attention has recently been devoted to the question of State control of the entire educational activity of the community, but the project is regarded with disfavour by the private school authorities, whose schools had to be established to meet public wants. The essential difficulty however of the private secondary school system is that its expense is prohibitive to people of limited income.

## § 2. State Schools.

1. **Introductory.**—The State Schools, or, as they are sometimes termed, the “public” schools, of the Commonwealth comprise all schools directly under State control, in contradistinction to the so-called “private” schools, the bulk of which, though privately managed, nevertheless cater for all classes of the community.

2. **Enrolment and Attendance.**—The following table shews the number of State Schools, together with the teachers employed and the enrolment and “average attendance” in each State during the year 1910:—

### STATE SCHOOLS, TEACHERS, AND SCHOLARS, 1910.

(COMMONWEALTH.)

State.	Schools.	Teachers.*	Scholars Enrolled.	Average Attendance
New South Wales ... ..	3,105	5,791	218,539	157,498
Victoria ... ..	2,036	5,028	206,263	145,968
Queensland ... ..	1,189	2,606	89,695	69,439
South Australia ... ..	733	1,316	52,929	37,549
Western Australia ... ..	455	967	32,664	27,442
Tasmania ... ..	390	799	27,820	17,974
Commonwealth ... ..	7,908	16,507	627,910	455,870

\* Exclusive of sewing mistresses.

Unfortunately, the schemes of enrolment and of the computation of “average attendance” are not identical in each State, so that the comparisons are imperfect. That the educational statistics of each State of the Commonwealth should be made up in the same way is much to be desired.

The enrolment and average attendance at the State Schools in the Commonwealth are given below for the year 1891, and for each year of the period 1900 to 1910:—

## ENROLMENT AND ATTENDANCE AT STATE SCHOOLS, 1891 to 1910.

(COMMONWEALTH.)

Year.	Total Population.	Enrolment.	Average Attendance.	Year.	Total Population.	Enrolment.	Average Attendance.
1891	3,240	561,153	350,773	1905	4,032	621,534	442,808
1900	3,765	623,707	441,924	1906	4,091	609,592	442,440
1901	3,824	638,478	450,246	1907	4,161	611,990	444,001
1902	3,875	636,888	455,482	1908	4,232	618,836	446,146
1903	3,916	629,269	446,539	1909	4,323	624,236	458,260
1904	3,974	625,594	445,709	1910	4,425	627,910	455,870

1. In thousands.

It will be seen from the above table that, despite the increase of population, the official figures of enrolment and average attendance at the State Schools of the Commonwealth shew unsatisfactory results, although an upward tendency is evident in the figures for 1909. An examination of the graphs on pages 256 to 258, shewing birth-rate, will make it apparent that this is at least in part due to the diminished birth-rate of past years.

3. **Births and School Attendance.**—The table below gives the total births in each State and in the Commonwealth during each of the eight-year periods 1890-97, 1891-98, 1892-99, 1893-1900, 1894-1901, 1895-1902, 1896-1903, 1897-1904 and the average attendance at State Schools for each year from 1903 to 1910:—

## COMPARISON OF BIRTHS AND SCHOOL ATTENDANCE.

(COMMONWEALTH.)

Year.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
TOTAL BIRTHS.							
1890-97 ...	310,279	281,918	116,600	83,068	18,606	38,894	849,365
1891-98 ...	307,541	274,512	115,126	81,674	22,013	38,661	839,527
1892-99 ...	304,544	267,015	114,310	80,344	25,401	38,364	829,978
1893-1900 ...	301,649	259,963	114,208	78,951	29,007	38,263	822,041
1894-1901 ...	299,182	254,419	114,117	77,356	32,613	37,977	815,664
1895-1902 ...	298,066	250,622	114,356	75,804	36,722	38,210	813,780
1896-1903 ...	295,258	246,485	112,103	73,745	41,048	38,500	807,139
1897-1904 ...	297,419	244,070	112,168	72,830	45,442	39,189	811,118

## ATTENDANCE AT STATE SCHOOLS.

Year.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
1903 ...	154,382	145,500	69,759	42,752	20,283	13,863	446,539
1904 ...	153,260	145,122	68,661	42,234	22,111	14,321	445,709
1905 ...	151,033	143,362	68,780	41,807	23,703	14,123	442,808
1906 ...	151,261	142,216	69,771	40,489	24,973	13,730	442,440
1907 ...	152,607	147,270	66,849	37,861	24,950	14,464	444,001
1908 ...	156,000	143,551	67,309	38,193	25,141	15,952	446,146
1909 ...	160,080	146,106	69,755	38,255	26,673	17,391	458,260
1910 ...	157,498	145,968	69,439	37,549	27,442	17,974	455,870

4. **Centralisation of Schools.**—The question of centralisation of schools adopted so successfully in America has received some attention in the Commonwealth, and particularly in New South Wales. It is recognised that a single adequately-staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less highly-trained teachers, and the small schools in some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, when the conveyance of

pupils was authorised in the case of twelve schools. In 1910 subsidy was paid for conveyance to sixty-three schools.

**5. Education in Sparsely-settled Districts.**—It has always been the aim of the State to carry the benefits of education into the remotest and most sparsely-settled districts. This is effected in various ways. (i.) By the establishment of Provisional Schools, *i.e.*, small schools in which the attendance does not amount to more than about a dozen pupils, these institutions merging into the ordinary public school list when the attendance exceeds the minimum. (ii.) When there are not enough children to form a provisional school what are known as Half-time Schools are formed, the teacher visiting them on alternate days. In still more sparsely-peopled districts an itinerant teacher goes from house to house within a certain radius. Thus in Queensland during 1910 the twelve itinerant teachers covered 366,224 square miles of country and travelled 34,851 miles. In New South Wales parents in the thinly-peopled areas are also allowed to club together and build a school, which receives aid from the Government in the form of a yearly subsidy and grant of school material. An experiment on the part of New South Wales, the result of which was awaited with some interest, was the establishment in 1908 of a "travelling" school. A van was provided in which the teacher travelled, carrying with him a tent for himself and one to be used as a school, together with such books and apparatus as are required in a primary school. So far very satisfactory results have been attained. In 1910 there were also three railway camp schools in operation on the sites of extensive railway works.

**6. Evening Schools.**—Evening Public Schools have been in existence for many years in some of the States, but their progress has been uncertain. In New South Wales, at latest available date, there were 36 schools with an average attendance of 548; Victoria had nine schools with enrolment of 1194 and an average attendance of 357; Queensland had evening continuation classes attended by 54 pupils; and Western Australia had two schools with an enrolment of 103 district students. Up to the end of 1910 the evening schools in New South Wales aimed chiefly at giving primary instruction, but in October of that year evening continuation schools of two types were established—(i.) Artisan Schools for boys learning trades; and (ii.) Commercial Schools for boys starting in business. So far the venture has proved successful and it is proposed to have at least fifty of these schools in operation at the end of 1911.

**7. Higher State Schools.**—(i.) In *New South Wales* public schools, which provide advanced courses of instruction for two years for pupils who have completed the primary course, are classed as *Superior Schools*. There were 145 of these schools in existence at the end of 1910, with an enrolment of about 96,000 scholars. Provision has also been made for the more advanced education of children in country centres by the establishment of twenty-eight district schools. These schools are specially staffed and undertake the work of preparing students for admission to the training colleges. There are also five *High Schools* in the State—two for boys, two for girls, and one for boys and girls. These had an enrolment in 1910 of 1168 pupils, with an average attendance of 826. From the beginning of 1911 the upper sections of the girls' and boys' schools at Fort Street have been graded as *High Schools*. In order to provide teachers of agriculture, provision is made for ten teacher-students annually to attend the second year's training at the Hawkesbury Agricultural College.

The Sydney Grammar School (not a "State" School in the ordinary acceptance of the term), which receives a State endowment of £1500 a year, had in 1910 a quarterly enrolment of 572 pupils and an average attendance of 536.

(ii.) In *Victoria*, what are termed "*Continuation Schools*" have been established at Melbourne, Ballarat, Bendigo, Castlemaine, and Geelong for the purpose of giving preliminary training to young people who propose to join the ranks of the teaching service, and it is hoped that ere long the supply from this source will preclude the necessity for the employment of inexperienced pupil teachers. Agricultural High Schools to which teacher students are also admitted, are referred to in (8) hereafter. The enrolment of these High State Schools in 1910 was 1338, of whom 722 were girls.

(iii.) Prior to the year 1911 *Queensland* did not possess any distinctly secondary schools under State control, but High Schools have now been established in the more important centres. There are, moreover, ten Grammar Schools—six for boys, and four for girls, each of which is subsidised by the State to the extent of £750 per annum, and in addition receives a payment of £250 per annum for providing district scholarships. These scholarships, fifty in number, are granted to State School pupils. The enrolment at the Grammar Schools in 1910 was 1300, and the average attendance 1160. Since the year 1909 these schools have been regularly examined by the Inspector-General of the Education Department. The Government proposes to take over the schools at an early date.

(iv.) *South Australia*. The Adelaide High School was opened on the 24th September, 1908, and the Advanced School for Girls, which had been carried on with much success since its opening in 1879, was merged into it, as was also the Pupil Teachers' School, which had been successfully carried on for eight years. Pupils in attendance at the combined school in 1910 numbered 506. Of these, 82 were student teachers, 162 were improving their general education prior to beginning work, 197 were studying for University examinations, and 65 were taking a commercial course. District High Schools were carried on in 1910 at eighteen centres with a total attendance of 1578 pupils.

(v.) *Western Australia*. A Modern School designed to give a four years' course sufficient to qualify for entrance to the University was opened in Perth early in 1911. Accommodation was provided for 250 pupils, and the available places have all been eagerly sought for. During 1909 the upper classes of schools in the largest centres of population were brought together into central schools, in order to secure more economical and effective teaching, and it is intended that these central institutions shall form the nucleus of future High Schools. Evening Schools are held in various parts of the State, but the work carried on is mainly primary. The Perth High School for boys is subsidised by the State to the extent of £1000 annually.

(vi.) *Tasmania*. No direct provision has hitherto been made by Tasmania for public education of a standard intermediate between that of the State School and the University, but a few pupils are prepared in the ordinary State Schools for the Junior Public Examination of the University. It is intended to encourage this work in future, and the scheme of scholarships, which was discontinued for many years, has recently been revived. For a period of thirty years, from 1860 to 1890, there was in force in Tasmania a system under which the State, without actually providing educational agencies, did much to foster education within the range of the generally accepted High School curriculum, for the Council of Education during this period conducted public examinations of various grades, at which scholarships for juniors to "superior" schools were awarded, as well as exhibitions to British Universities. The Council also granted the degree of "Associate of Arts" in imitation of the similar Oxford title. Later on the Council of Education evolved and expanded into the University of Tasmania.

**8. Agricultural Training in State Schools.**—The question of agricultural training in ordinary schools has received considerable attention in *New South Wales*. In 1905 a teacher of school agriculture was appointed to visit schools and districts for the purpose of giving instruction to teachers and scholars in the subject, the officer selected possessing the dual qualifications of a thorough acquaintance with agricultural work and school methods. The Education Department makes grants of seeds of various kinds to the schools having gardens, and in some instances has installed windmill plants to provide an adequate water supply. Under the direction of a capable head master, a college has also been opened at Hurlstone, near Sydney, at which practical lessons are given in elementary agriculture, and the institution also serves as a stepping-stone to the Hawkesbury Agricultural College. During the year 1910 there were 58 students enrolled, of whom 31 were in residence. The Department has also organised Rural Camp Schools for the purpose of giving teachers and scholars first-hand knowledge of country

industries. Schools of this nature were held in 1910 at Nowra and Bathurst. The former was attended by 516 boys and 45 teachers, and the latter by 685 boys and 52 teachers.

The subject of agricultural colleges and experimental farms is dealt with in the section relating to Agriculture. (See page 412.)

In *Victoria* what are termed Agricultural High Schools have been established at Warrnambool, Sale, Shepparton, Wangaratta, Ballarat, Colac, and Mansfield. Pupils must be at least fourteen years of age, and have obtained a certificate of merit from the local school, or else be able to afford satisfactory proof that they are qualified to profit by the instruction offered. A local council is to be appointed for each school, and will exercise a general oversight over its operations. The experimental plots at these schools have aroused much interest among the farmers from the surrounding districts. A Supervisor of Agriculture reports and gives advice on the teaching of agriculture in the State Schools. The elementary principles of agriculture are now taught in about 400 State Schools.

Although *Queensland* possesses an Agricultural College and several experimental farms, there is no agricultural institution directly connected with the Education Department. The Government, however, provides a small grant to encourage the study of agriculture, horticulture, and kindred subjects in the State Schools, while a departmental teacher of agriculture visits the schools and gives assistance in agricultural, horticultural, and nature study work. Some excellent experimental work has been carried out at a few of the schools, while gardens have been established wherever circumstances permitted. Short courses of instruction for teachers have been instituted at the Gatton College. A large number of teachers have gained a practical knowledge of milk and cream testing, and the subject is now added to the programme of instruction in several of the dairying districts.

In *South Australia* the Public Schools' Floral and Industrial Society, founded in 1880, holds annual exhibitions of school work from all parts of the State. In addition, it has for some years undertaken the distribution of flower seeds among school children at a very cheap rate, and has thus fostered the love of horticulture with remarkable success. A special instructor has been appointed to give assistance to teachers desirous of making their school gardens aid in nature study work.

In *Western Australia* an advisory teacher of nature study visits the schools and gives advice in regard to proper methods in horticulture and experimental agricultural work. The number and usefulness of the gardens and experimental plots attached to State schools shew marked improvement each year.

**9. Teachers in State Schools.**—The distribution of the teaching staff in the State Schools during the year 1910 was as follows:—

### TEACHING STAFF IN STATE SCHOOLS, 1910.

(COMMONWEALTH.)

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mis- tresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales	2,241	544	1,013	1,957	8	28	109	3,262	2,638	5,900
Victoria ...	1,525	652	267	868	412	1,304	413	2,204	3,237	5,441
Queensland ...	713	480	277	586	210	340	—	1,200	1,406	2,606
South Australia ...	309	376	83	367	59	122	112	451	978	1,429
Western Australia	266	181	89	317	15	99	64	370	661	1,031
Tasmania ...	180	189	24	159	57	190	—	261	538	799
Commonwealth	5,234	2,422	1,753	4,254	761	2,083	699	7,748	9,458	17,206

It will be observed that there is a fairly large number of junior teachers, or pupil teachers, as they are called in most of the States. The pupil teachers will, however, in time disappear, and their places will be filled by young people who have undergone a course of training in schools specially provided for the purpose. Allusion to the methods of training will be found in the next paragraph.

**10. Training Colleges.**—The development of the training systems of the various States has been alluded to at some length in preceding issues of the Year Book. The present position is as follows :—

(i.) *New South Wales.* During 1910, the total number of students in the Blackfriars Training College was 303, women students numbering 149. A branch institution was opened early in 1911 at Hereford House for the training of candidates for the position of teacher or assistant at small country schools. At the various district schools there were during 1910, 167 first-year and 209 second-year probationary students. Of the latter, 206 passed the entrance examination for the Training College. There were still remaining 36 so-called pupil teachers at the end of 1910.

(ii.) *Victoria.* The teachers in this State are trained by means of what is known as the "junior-teacher" system, i.e., training of junior teachers in the State Schools by the head masters, or by a two years' course in a Junior Training College—otherwise known as a Continuation School or Agricultural High School—supplemented by a course of training for two years in the Senior Training College at Melbourne. There are eleven Continuation Schools now in operation, of which seven give training in elementary agriculture. The junior teacher is, of course, not sensibly different from the pupil teacher of New South Wales. The present Training College dates back to 1874, but during the retrenchment period, viz., from 1893 to 1900, it was closed. The institution was reopened in February, 1900, with an enrolment of fifty-seven students. By the 30th June, 1910, the number had increased to 106. Since its reopening the College has also given attention to the training of kindergarten teachers, and the course of study prescribed for infant teachers has received the sanction of the Education Department and also of the Kindergarten Association. The College receives students for training from private schools. In 1910 a Summer School was held at Portsea, the attendance of teachers thereat being 230. A Sloyd School for country teachers was also held at the Continuation School.

(iii.) *Queensland.* There is no Training College in Queensland at the present time, but it is hoped ere long to establish one at Brisbane in affiliation with the University of Queensland. Young people of both sexes are admitted to the service as pupil-teachers at the age of fourteen years, the only training received being that given by the principals of the schools to which they are appointed. The school for infants at Kangaroo Point has, however, been specially staffed and equipped for training Kindergarten teachers. It is proposed to establish similar institutions at Rockhampton and Townsville.

(iv.) *South Australia.* During the year 1910 the system of training in force in South Australia was remodelled and improved. Prior to this year students had devoted themselves chiefly to academic studies, but in 1910 provision was made for increased attention to the theory and practice of teaching. District courses of training were established to prepare teachers for work in primary and infant schools, and an advanced course was outlined for those who will become High School teachers. Each of these courses extends over a year. Students in the primary course who shew special ability may be granted a second year's training. The special course for Secondary Schools will give students an opportunity of obtaining the diploma of education. There were 64 students in the Training College in 1910. At the Adelaide High School 44 pupil-teacher students remained from 1909 and 38 new candidates were admitted. Fifty candidates passed the prescribed test for monitors during the year. A School of Instruction at which 40 teachers attended was held at Adelaide for two weeks after the June vacation in 1910.

(v.) *Western Australia.* A Training College for teachers was opened at Claremont in 1902. The original building provided accommodation for sixty students, but extensions were opened in 1908, and the number in training during 1910 was 66. The course in the Training College lasts two years. Central classes for "monitors" (*i.e.*, pupil teachers) were established at Perth in 1903, and monitors outside the metropolitan area are instructed by correspondence. A Normal School was established in Perth in 1907 for the purpose of providing a two years' course of higher instruction for a limited number of children who had completed the State School course and intended to become teachers. The pupils in attendance during 1910 numbered 59, of whom 33 were girls. In February, 1911, the Normal School was closed and replaced by a better equipped institution known as the Modern School. To assist teachers of small schools to gain some experience of the best method of school management, a Model School has been established at Gosnell's, and arrangements have been made for intending teachers, as well as those actually in charge of small schools, to spend a portion of their time at this institution. Schools of instruction for teachers in charge of the smaller country schools are held in different centres by district inspectors as well as in Perth, while an advisory teacher visits the schools in outlying districts and instructs the teachers in the best method of school management.

(vi.) *Tasmania.* The system of training adopted in Tasmania is as follows:—(a) The candidate is selected at fourteen years of age by a head teacher, and assists as a "monitor" for about a year, during which period he must give proof of suitability for training. (b) At the end of this period there is a two years' course of training in the Training College. (c) The candidate then returns to his own school and teaches there for two years, the head teacher being responsible for his training in practical work, while the Training College authorities give lessons by correspondence. (d) The last stage is a final year in the Training College as a senior student. Some of the more advanced are granted a second year's training, and it is proposed to allow at least one each year to qualify for the Diploma of Education at the Melbourne Training College.

11. **School Savings Banks.**—Returns shew that these institutions are in existence in three States. In New South Wales, there were 696 banks at the end of 1910, the deposits amounting to £26,062 and withdrawals to £25,048. Since the establishment of the banks in 1887, deposits totalled £375,640, and withdrawals £364,718. Of the latter sum £90,604 was placed to children's accounts in Savings Banks. In South Australia, 179 schools had 7520 depositors with £2107 to their credit; and in Western Australia, there were 150 school banks with 7246 depositors and £6808 at credit.

12. **Expenditure on State Schools.**—The net expenditure in each State on primary education during each year of the period 1901 to 1910 is shewn below. The figures do not include expenditure on buildings, which is shewn separately in a subsequent table.

#### EXPENDITURE ON MAINTENANCE, STATE SCHOOLS, 1901 to 1910.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901 ...	623,734	656,907	256,245	152,006	89,694	37,710	1,816,296
1902 ...	652,860	681,282	261,317	151,462	103,898	48,161	1,898,980
1903 ...	677,683	669,376	256,325	147,297	122,016	48,300	1,920,997
1904 ...	693,954	670,182	261,583	147,842	134,064	50,018	1,957,643
1905 ...	699,789	663,580	278,972	151,242	139,043	44,974	1,977,600
1906 ...	727,471	663,302	286,629	152,713	153,010	45,683	2,028,808
1907 ...	816,249	677,701	297,210	152,400	159,122	52,830	2,155,512
1908 ...	934,603	692,410	299,227	152,950	164,456	60,407	2,304,053
1909 ...	940,534	726,020	309,704	164,863	166,103	73,532	2,380,756
1910 ...	979,775	788,246	323,372	177,827	172,470	74,907	2,516,597



The expenditure per head of average attendance for each of the years given above will be found in the succeeding table. As the figures shew, Western Australia has the highest average, followed by New South Wales and Victoria, the lowest rate being in Tasmania.

### COST PER HEAD OF AVERAGE ATTENDANCE, STATE SCHOOLS, 1901 to 1910.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901 ...	4 0 10	4 7 0	3 12 9	3 9 5	5 9 3	2 12 11	4 0 8
1902 ...	4 3 9	4 10 8	3 11 9	3 9 8	5 12 8	3 6 3	4 3 5
1903 ...	4 7 10	4 12 0	3 13 6	3 8 11	6 0 4	3 9 8	4 6 0
1904 ...	4 10 7	4 12 4	3 16 2	3 10 0	5 1 3	3 9 10	4 7 10
1905 ...	4 12 8	4 12 7	4 1 2	3 12 4	5 17 3	3 3 8	4 9 4
1906 ...	4 16 2	4 13 3	4 2 2	3 15 5	6 2 6	3 6 6	4 11 8
1907 ...	5 7 4	4 12 0	4 8 11	4 0 6	6 8 11	3 12 9	4 17 4
1908 ...	5 19 9	4 16 6	4 8 11	4 0 1	6 10 10	3 15 9	5 3 3
1909 ...	5 17 6	4 19 5	4 8 0	4 6 2	6 4 6	4 4 7	5 3 11
1910 ...	6 4 5	5 8 0	4 13 2	4 14 9	6 5 8	4 3 4	5 10 5

Expenditure on school buildings in each of the years quoted was as follows:—

### EXPENDITURE ON STATE SCHOOL BUILDINGS, 1901 to 1910.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901 ...	57,663	36,040	33,421	13,656	49,073	7,762	197,615
1902 ...	76,793	81,946	9,443	11,250	32,669	11,931	224,032
1903 ...	100,955	39,369	9,006	11,805	35,953	6,710	203,798
1904 ...	72,051	19,502	14,489	9,056	32,892	4,427	152,417
1905 ...	58,820	32,041	14,187	9,094	35,925	4,809	154,876
1906 ...	89,975	39,184	24,896	13,340	39,390	3,456	210,241
1907 ...	103,348	68,416	30,340	15,839	38,928	7,216	264,587
1908 ...	146,715	106,983	44,333	22,726	34,299	8,659	363,715
1909 ...	149,767	162,932	57,349	31,512	31,099	8,442	441,101
1910 ...	191,188	118,556	50,668	44,025	47,637	16,957	469,031

The total net cost and the net cost per scholar in average attendance during the year 1910 were as follows:—

### NET TOTAL COST PRIMARY EDUCATION, 1910,

(COMMONWEALTH.)

Item.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Net cost of primary education, including buildings ...	1,170,963	906,802	374,040	221,852	230,107	91,864	2,985,628
Per scholar in average attendance ...	£7 8/8	£6 12/3	£5 7/9	£5 18/2	£8 0/5	£5 2/3	£6 11/0

The average for the Commonwealth in 1901 was £4 9s. 3d. per scholar in average attendance.

### § 3. Private Schools.\*

1. **School Teachers, etc., in 1910.**—The following table shews the number of Private Schools, together with the teachers engaged therein, and the enrolment and average attendance in 1910:—

#### PRIVATE SCHOOLS, 1910.

(COMMONWEALTH.)

State.	Schools.	Teachers.	Enrolment.	Average Attendance.
New South Wales ... ..	774	3,602	59,247	49,351
Victoria ... ..	641	2,067	54,740	44,000
Queensland ... ..	159	761	16,320	13,950
South Australia ... ..	185	683	11,334	9,408
Western Australia ... ..	119	407	9,400	7,563
Tasmania ... ..	140	420	7,653	5,600
Commonwealth ... ..	2,018	7,940	158,694	129,872

The figures for Queensland include the returns from Grammar Schools, of which there are ten—six for boys and four for girls. These schools are governed by boards of trustees, partly nominated by Government, and partly by the subscribers to the funds. The trustees make regulations regarding the fees of scholars, the salaries of teachers, and generally for the management of the schools. Each school is endowed by the Government at the rate of £750 per annum together with an additional £250 to provide district scholarships, of which five were allotted to each school from 1st January, 1909.

2. **Growth of Private Schools.**—The enrolment and average attendance at Private Schools during 1891 and in each year of the period 1900 to 1910 are shewn below:—

#### ENROLMENT AND ATTENDANCE AT PRIVATE SCHOOLS, 1891 to 1910.

(COMMONWEALTH.)

Year.	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891 ...	124,485	99,588	1905 ...	145,143	118,627
1900 ...	153,433	124,313	1906 ...	152,058	124,510
1901 ...	148,659	120,742	1907 ...	152,037	122,878
1902 ...	144,437	117,293	1908 ...	152,399	125,530
1903 ...	147,135	120,193	1909 ...	164,428	127,069
1904 ...	146,339	119,915	1910 ...	158,694	129,872

In view of the growth in population during the period covered by the table the increase in enrolment and attendance does not afford room for much satisfaction. The returns will no doubt in future be to some extent adversely affected by the development of the Higher State Schools alluded to in a preceding paragraph.

\* Private Schools include all schools not wholly under State control. The term "private" though popularly applied is, of course, a misnomer.

**3. Defects in Returns of Private Schools.**—Throughout Australia, until quite recently, no administrative machinery existed by means of which supervision could be exercised over the course of education carried out under other ægis than that of the Departments of Education themselves. These departments were without authority over the qualifications of the teaching staff, the equipments, the curricula, or general circumstances of private or denominational schools. With the exception of Western Australia, Victoria, and Tasmania, this state of things continues to the present time.

Without a thorough system of registration of all schools (public or private) the certainty of the operation of the compulsory clause of Public Instruction Acts must necessarily be insecure. Proper statistical information, moreover, cannot be obtained without imposing upon all schools the duty of rendering complete and prompt returns in regard to enrolment, attendance, teaching staff, equipment, etc.

Recent educational criticism has led, not only to a better training of teachers in State Schools, and, to some extent, in Private Schools, but also to a better recognition of the importance of accurate information as to the progress of educational events. It is understood that in New South Wales steps will be taken shortly to secure more adequate information as to the condition of schools generally.

In Victoria up to the year 1905 no attempt had been made to bring Private Schools under general administrative control, but the Registration of Teachers and Schools Act of 1906, and the Education Act of 1910, established a registration scheme under a special committee. At present, the committee consists of nine members of the Council of Education. Section 60 of the Act of 1910, also empowers the Minister of Education to authorise the inspection of any school (other than a State School) in order to ascertain whether the instruction given is satisfactory. In his first report, the inspector of registered schools pointed out that there is a fair number of institutions which are very unsatisfactory both as regards buildings and quality of instruction given therein.

In Queensland, with the exception of the Grammar Schools, which are now examined annually, there is practically no control over the Private Schools, beyond the fact that they may submit themselves to inspection if so desired, and there is apparently no provision in South Australia for any Government supervision over Private School affairs.

In Western Australia, non-Government schools must be declared efficient by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law, and the school registers must be open to the inspection of the compulsory officers of the Department.

In Tasmania the Education Act requires the teachers of other than State Schools "to furnish during January of each year returns showing attendances at such schools." Despite the fact that penalties are prescribed for non-compliance with the law, nevertheless many teachers neglect to return the forms sent out. Provision has been made for registration of private teachers and schools very much on the lines adopted in Victoria. The Act declares that all persons who were employed in a *bona fide* manner for at least three months before 25th October, 1906, are entitled to be registered as teachers without submitting proof of professional qualifications. No person can be registered as a private teacher since July, 1907, unless the Board is satisfied as to his fitness for the work.

#### § 4. Free Kindergartens.

The following information regarding Free Kindergartens in the Commonwealth has been compiled from particulars supplied by the principals of the chief institutions in each State, except in the case of Victoria, the details for this State being furnished by the honorary secretary of the Free Kindergartens Union.

## FREE KINDERGARTENS IN THE COMMONWEALTH, 1910.

State.	No. of Schools.	Teachers.	Average Attendance of Children.	Number of Teachers in Training.
New South Wales (Sydney) ...	8	38	380	41
(Newcastle) ...	3	4	110	10
Victoria (Melbourne) ...	13	23	900	37
Queensland (Brisbane) ...	1	2	73	5
(Clermont) ...	1	1	27	3
South Australia (Adelaide) ...	4	27	250	21
Tasmania (Hobart) ...	1	4	44	3
(Launceston) ...	1	5	35	4
Total ...	32	104	1,819	124

At Brisbane the training of teachers is undertaken by the Queensland Crèche and Kindergarten Association. In Tasmania, schools were established in Hobart and Launceston at the end of 1910, and information regarding them consequently appears for the first time in this issue.

There are no free Kindergartens in Western Australia, but it is proposed to establish one or more institutions in Perth.

It must, of course, be distinctly understood that the information given above refers to Kindergartens under private management, and is exclusive of institutions controlled by the Education Departments of the various States.

## § 5. Universities.

1. **Origin and Development.**—The history of the foundation and progress of the four then existing Australian Universities was traced at some length in Year Books I. and II. In the present volume space will permit of only a very brief reference to the subject.

(i.) *University of Sydney.* The Act of Incorporation of the University of Sydney received Royal assent on the 1st October, 1850, and the first Senate was appointed on the 24th December of that year. The first matriculation examination was held in October, 1852, when twenty-four candidates passed the required test, and the formal inauguration ceremony took place on the 11th October of the same year. A Royal Charter was granted to the University on the 27th February, 1858. Women students were admitted in 1881. At the inception of the University there were only three professorships. The present staff consists of eighteen professors, five assistant professors, and eighty-three lecturers and demonstrators. There are, in addition, two honorary lecturers, four honorary demonstrators, as well as fifty miscellaneous assistants in laboratories and three curators of museums.

(ii.) *University of Melbourne.* This institution was established by Act of Parliament assented to on the 22nd January, 1853, and its first Council was appointed on the 11th April of that year. The foundation stone of the main building was laid on the 3rd July, 1854, and the University was formally inaugurated on the 13th April, 1855. By Royal Letters Patent issued in 1859 its degrees are, like those of the Sydney institution, declared of equal status with those of any other University in the British Empire. Women students attended lectures for the first time in 1881. The University, which

began in 1855 with Schools of Arts and Laws, has now a staff of eighteen professors and sixty-one lecturers and demonstrators. The Conservatorium of Music has a staff numbering twenty-five.

(iii.) *University of Adelaide.* This University was established by Act of Parliament in 1874. Its origin and progress was largely due to the munificence of the late Sir Walter Watson Hughes and Sir Thomas Elder, G.C.M.G., the total gifts of the latter amounting to over £100,000. The academical work of the institution was commenced in March, 1876, when eight matriculated and fifty-two non-graduating students attended lectures. The foundation stone of the University buildings was laid on the 30th July, 1879, and the buildings were opened in April, 1882. In 1881, by Royal Letters Patent, the degrees granted by the institution were recognised as of equal distinction with those of any University in the British Empire. The Elder Conservatorium of Music was opened in 1898. Power was given by Act of Parliament in 1880 to grant degrees to women. At first there were only four professorships in the University, whereas the present staff consists of ten professors and twenty-eight lecturers and demonstrators, exclusive of the staff at the Conservatorium, which numbers ten.

(iv.) *University of Tasmania.* The Act to establish the University of Tasmania (Hobart) was assented to on the 5th of December, 1889. At the present time, the institution, which is small but efficient, possesses a staff of four professors and four lecturers. Under Statute dated 13th April, 1905, the Zeehan School of Mines and Metallurgy was affiliated to the University.

(v.) *University of Queensland.* The Act to establish the University of Queensland was passed in 1909, and the first Senate was appointed on the 14th April, 1910. The University was opened on the 18th and lectures were given on the 20th March, 1911, by professors of classics, chemistry, physics and mathematics, and engineering.

(vi.) *University of Western Australia.* The University Commission in this State has recommended the establishment of a University somewhat on the lines of those in the eastern States, but with such amendments as would bring it as far as possible into accord with the most modern requirements. The Act establishing a University was passed on the 18th February, 1911. In addition to lectureships, it is proposed to open the institution with four professorships—modern literature and history, mathematics and physics, chemistry, and engineering and mining—while a chair in agriculture will be endowed by the generosity of Dr. Hackett.

**2. Teachers and Students of Universities.**—The following table shews the number of professors and lecturers and the students in attendance at each of the Commonwealth Universities during the year 1910:—

UNIVERSITIES.—TEACHERS AND STUDENTS, 1910.

University.	Professors.	Lecturers.	Students attending Lectures.		
			Matriculated.	Non-matriculated.	Total.
Sydney ... ..	23	83	1,005	337	1,342
Melbourne ... ..	18	61	...	...	1,118*
Adelaide ... ..	10	28	393	272	665†
Tasmania (Hobart) ...	3	7	72	75	147
Queensland (Brisbane)‡	...	...	...	...	...

\* Exclusive of 119 music students. † Exclusive of 285 music students. ‡ Opened in 1911.

**3. University Revenues.**—The income of the Universities from all sources during the year 1910 was as follows:—

## UNIVERSITIES.—REVENUE, 1910.

University.	Government Grants.	Fees.	Other.	Total
	£	£	£	£
Sydney ... ..	18,800	19,453	26,052	64,305
Melbourne ... ..	21,000	23,119	1,074	45,193
Adelaide ... ..	7,210	9,633	5,655	22,498
Tasmania (Hobart) ... ..	4,750	1,217	128	6,095

The column "Other" includes the receipts from private foundations. The extent to which the Universities have benefited by private munificence will be apparent from the following table :—

## PRINCIPAL PRIVATE BENEFACTIONS TO AUSTRALIAN UNIVERSITIES.

University of Sydney.		University of Melbourne.		University of Adelaide.	
Donor.	Amount.	Donor.	Amount.	Donor.	Amount.
	£		£		£
J. H. Challis ... ..	277,000	Sir Samuel Wilson ... ..	30,000	Sir Thos. Elder ... ..	100,130
Sir P. N. Russell ... ..	100,000	James Stewart ... ..	25,624	Sir W. Hughes ... ..	20,000
Thos. Fisher ... ..	30,000	Sir Francis Ormond ... ..	20,000	Hon. J. H. Angas ... ..	10,000
Edwin Dalton ... ..	8,000	John Hastie ... ..	19,140	R. Barr Smith ... ..	9,150
Hugh Dixon ... ..	7,050	Robert Dixon ... ..	10,837	Other donations ... ..	11,817
Hon. Sir W. Macleay ... ..	6,000	David Kay ... ..	5,764		
Mrs. Hovell ... ..	6,000	Henry Dwight ... ..	5,000		
Thos. Walker ... ..	5,700	Wm. Thos. Mollison ... ..	5,000		
Other donations ... ..	52,740	Other donations ... ..	43,534		
Total	£ 492,490	Total	£ 164,899	Total	£ 151,097

The credit balances of some of the above endowments now amount to very considerable sums. For example, on the 31st December, 1910, the Challis Fund amounted to nearly £316,000, and the Fisher bequest to £40,000. Altogether the totals for the University of Sydney might be increased by £70,000. In the case of Melbourne University the Hastie fund on the 31st December, 1910, stood at £19,000, the Dixon fund at £11,900, etc.

In addition to the above there were various other bequests to Sydney University—*e.g.*, collection of Egyptian antiquities, etc., by Sir Charles Nicholson, and Natural History collection by Mr. Geo. Masters, while the building for the Natural History Museum was given by Sir W. Macleay. Numerous prizes and scholarships have also been given to the various colleges. In Melbourne, Sir Francis Ormond's benefactions to Ormond College amounted to about £108,000. Private benefactions to the University of Tasmania and the newly-established University of Queensland amount to £1445 and £2192 respectively.

4. **University Extension.**—These lectures were instituted at Sydney University in 1886, but under a statute of the Senate, approved of in 1892, a Board was appointed, which was empowered from time to time to recommend to the Senate the names of suitable persons for giving courses of lectures, and to hold examinations in the subjects of the lectures. The Board receives and considers applications from country centres, and makes provision for engaging lecturers and managing the entire business connected with the various courses. The project has only met with fair success, no lectures having been given in some years, but lately there appears to be an awakening of interest in the matter. The Board also arranged for courses of lectures in Queensland, Victoria, and Western Australia. In 1910 the average attendance at extension lectures in New South Wales was 145.

University extension lectures in Victoria date from the year 1891, when a Board was appointed by the Melbourne University for the purpose of appointing lecturers and holding classes and examinations at such places and in such subjects as it might think fit. Interest in University extension has varied in Victoria, but lectures were delivered in thirteen centres in 1910.

The Adelaide University has also instituted short courses of extension lectures in Arts and Science, to which students are admitted on payment of a nominal fee. Public intimation of these lectures is made from time to time during the session. For 1911 a course of twelve lectures was provided. The University of Tasmania provides for courses of lectures at Launceston, which are delivered weekly by members of the University teaching staff.

## § 6. Technical Education.

1. **General.**—Although provision has been made in some of the States in respect to many necessary branches of technical education, the total provision made would imply that this branch of education has not been regarded as of great importance. As will be seen later on, the expenditure on technical education for the whole of Australasia is comparatively insignificant.

2. **New South Wales.**—The present organisation of technical education in this State dates from the year 1883, when a Technical Education Board was appointed as a result of suggestions made at the Technological Conference held in 1879. This Board continued its function till November, 1889, when it was dissolved, and the work has thenceforward been carried on as a branch of the Public Instruction Department. The chief centre of activity is, of course, in Sydney, where the Technical College and Technological Museum are situated, the college having been opened for the reception of students early in 1892. Colleges have also been erected in some of the chief country towns—at Maitland in 1890; Newcastle 1896; Bathurst 1898; Broken Hill 1898; Albury 1899; and Goulburn 1902. In other centres classes have been established in various subjects whenever the prospects are sufficiently encouraging. The table below gives some idea of the development of technical education in New South Wales:—

TECHNICAL EDUCATION, NEW SOUTH WALES, 1901-10.

Year.	Number of Classes.	Number of Enrolments.	Average Weekly Attendance.	Number of Lecturers and Teachers.	Fees Received.
					£
1901 ... ..	331	12,267	7,721	133	8,068
1906 ... ..	654	15,594	9,771	249	11,007
1907 ... ..	718	17,662	11,260	273	13,046
1908 ... ..	790	18,490	10,498	280	14,176
1909 ... ..	864	21,242	12,265	292	15,475
1910 ... ..	886	22,822	13,255	334	15,873

The enrolments in 1910 were distributed as follows:—

Sydney College Classes	...	...	...	10,171
Suburban Classes	...	...	...	2,837
Country Classes	...	...	...	6,687
				19,695
Classes at Public Schools	...	...	...	3,127
Total	...	...	...	22,822

Technical Day Schools have been established at the Central College in Sydney, and at Newcastle and Goulburn. The course of instruction covers two years and is designed

to prepare young students for admission to the Engineering, Mining, or Architecture classes at the College. As mentioned elsewhere, higher technical training is afforded at the Schools of Mines and Engineering in connection with the University. References to the Agricultural Colleges will be found in the section dealing with Agriculture.

3. **Victoria.**—Technical instruction in mining has for many years received considerable attention in Victoria, the Ballarat School of Mines, which was established as far back as 1870, having achieved an Australasian reputation. The general scheme of instruction, however, lacked cohesion, and it was not until after the publication of the Report of the Royal Commission on Technical Education, which was appointed in 1899, that many defects were remedied. The largest technical institution in Melbourne is the Working Men's College, founded in 1887. The College, in addition to giving instruction in a large number of technical subjects, is also a School of Mines. Science and Art classes have been established at some of the larger State Schools. At the 30th June, 1910, there were nineteen technical schools receiving aid from the State. These were as follows:—

#### TECHNICAL EDUCATION, VICTORIA, 1910.

Institution.				Receipts.	Enrolment.
				£	
Melbourne Working Men's College	...	...	...	10,000	4,371
Ballarat School of Mines	...	...	...	4,000	1,173
Bendigo School of Mines	...	...	...	2,500	593
Geelong Gordon Technical College	...	...	...	1,000	475
Bairnsdale School of Mines	...	...	...	750	207
Maryborough Technical College	...	...	...	750	235
Stawell School of Mines	...	...	...	750	187
Castlemaine Technical School	...	...	...	550	201
Daylesford Technical School	...	...	...	350	161
Melbourne College of Domestic Economy	...	...	...	263	80
Sale Technical School	...	...	...	400	105
Horsham Working Men's College	...	...	...	350	90
Eastern Suburbs Technical College	...	...	...	1,000	342
Echuca School of Art	...	...	...	300	103
Kyneton Technical School	...	...	...	250	73
Nhill School of Art	...	...	...	200	86
Warrnambool School of Arts	...	...	...	150	30
Prahran Technical School	...	...	...	...	67

Of the above schools, seven afford instruction in Science, Art, and Trade subjects; four in Art and Science; four in Art and Trade; and four in Art.

4. **Queensland.**—Previous to 1902 Technical Colleges were carried on in connection with Schools of Art in many of the towns, under the control of local committees, by whom regulations were framed and the colleges administered. The aid granted by the State was £1 for every £1 raised locally, but no grant was to exceed the amount voted annually by Parliament. In 1902 a Board of Technical Education was formed, and held office from September of that year till the 27th May, 1905, and during this time devoted much energy towards the improvement of technical education in Queensland. The control, however, was removed from the Board in July, 1905, and vested in the Minister of Education, who appointed an officer of his Department to the position of Inspector of Technical Colleges. This officer reports on technical education generally, inspects the colleges, sees that the grants to the various colleges are spent to the best advantage, and so on. Under "The Technical Instruction Act of 1908" the State may contribute four-fifths of the cost of construction and equipment of Technical Colleges, and the provision has already been availed of in several instances. Efforts are being made to bring the country Technical Colleges into closer relationship with the State Schools, by providing for the instruction of selected pupils in various technical subjects. Moreover, representatives of the Educational Department have been appointed to the committees of



country colleges, and greater uniformity in management has been secured. The success of the Central Technical College under the control of the Department has led several of the country colleges to ask the Department to take over control of the institutions, and a commencement has already been made in this direction. The sixteen colleges open in 1910 were situated at Bowen, Central (with branches at South Brisbane and West End), Bundaberg, Cairns, Charters Towers, Gympie, Herberton, Ipswich, Mackay, Maryborough, Mount Morgan, Rockhampton, Sandgate, Toowoomba, Townsville, and Warwick.

A Technical Day-school has been established at Brisbane for the purpose of preparing students for the college courses in the commercial, wool, engineering, mining, and domestic departments.

It is proposed to affiliate the Central Technical College with the University. The average enrolment per term in the various departments of Queensland Technical Colleges during the year 1910 was 6447, and the average attendance 5250. The number of students entering for examination in each branch is given hereunder.

#### TECHNICAL EXAMINATIONS, QUEENSLAND, 1910.

Department.	Entries.	Department.	Entries.
Art ... ..	461	Geology, Mineralogy, Mining	107
Commerce ... ..	705	Mechanical Engineering ...	209
Trades ... ..	238	Agriculture ... ..	50
Mathematics ... ..	540	Health and Sanitary Science	150
Physics ... ..	121	Domestic Science and Art ...	906
Chemistry and Metallurgy ...	287	Revisal ... ..	254
Electricity ... ..	29		

5. **South Australia.**—A considerable amount of attention has been given to technical education in South Australia, particularly in connection with the mining industry. The School of Mines and Industries in Adelaide was founded in 1889. There are in addition Schools of Mines at Moonta, Port Pirie, Kapunda, and Gawler. A School of Design, Painting, and Technical Arts has been established in Adelaide, with branches at Port Adelaide and Gawler. The conditions connected with the country Technical Schools, viewed from the standpoint of the Department of Education, are not considered satisfactory. While the Government bears the bulk of the cost of maintenance, the Minister for Education is not consulted in regard to the organisation, curriculum, or staffing of the schools. Although good work has been accomplished, the system of control of Technical Schools by independent councils is declared by the Director of Education to be no longer suitable, and stress is laid on the necessity for co-ordinating technical effort under one central authority.

#### TECHNICAL SCHOOLS, SOUTH AUSTRALIA, 1910.

Name of School.	Teachers.		Students Enrolled.	Average Weekly Attendance.
	Ordinary.	Special.		
South Australian School of Mines and Industries ... ..	24	20	3,401	2,789
School of Mines—Port Pirie ...	1	8	285	150
Moonta ... ..	1	9	308	185
Kapunda ... ..	6	11	148	137
Mt. Gambier ... ..	5	...	297	234
Gawler ... ..	1	8	207	157

6. **Western Australia.**—A Technical School was established at Perth in 1900, and since its opening has progressed rapidly. Extensive additions to the buildings were made in 1909, and the remodelled institution was opened in 1910. The institution is

affiliated with the Adelaide University, and it is hoped that the students will shortly be allowed to take the degree of B.Sc. without leaving the school. There are branch institutions at Midland Junction, Fremantle, Claremont, Coolgardie, Kalgoorlie, Boulder, Menzies, Murchison, Northam and Albany, while it is proposed to open classes at other centres as occasion demands. The schools are all under the control of the Education Department, the officer entrusted with their supervision being styled Director of Technical Education. The Director also supervises the School of Mines at Kalgoorlie, which is controlled by the Mines Department. The number of individual students at each college during the last term of 1910 was as follows:—

#### TECHNICAL CLASSES, WESTERN AUSTRALIA, 1910.

College.				Students.	College.				Students.
Perth	...	...	...	746	Kalgoorlie	...	...	...	97
Boulder	...	...	...	160	Fremantle	...	...	...	248
Menzies	...	...	...	18	Midland Junction	...	...	...	71
Claremont	...	...	...	59	Northam	...	...	...	67
Murchison	...	...	...	9	Albany	...	...	...	50
Coolgardie	...	...	...	59					

7. **Tasmania.**—In this State provision for technical education dates from the year 1888. At the present time the most important technical institution is the School of Mines and Metallurgy at Zeehan. Courses of instruction are given in metal mining and in metallurgical chemistry and assaying, the diploma in metal mining entitling the holder to the Government certificate of competency as a mine manager. The institution is affiliated to the University of Tasmania. There are also three other schools under the control of the Education Department, each managed by a committee appointed by the Governor-in-Council. Tasmanian Technical Schools naturally devote their chief attention to mining and mineralogy.

Particulars regarding the schools are given hereunder:—

#### TECHNICAL CLASSES, TASMANIA, 1910.

								£
No. of schools	...	...	...	4	Receipts	...	...	3,713
Students enrolled	...	...	...	614	Government aid	...	...	2,658
Average attendance	...	...	...	267	Fees	...	...	681

The table hereunder shews the enrolment and attendance at Technical Schools and classes in the Commonwealth during 1910:—

#### ENROLMENT AND ATTENDANCE AT TECHNICAL SCHOOLS, 1910.

(COMMONWEALTH.)

State.				Enrolment	Average Attendance	Technical Classes at State Schools.	
						Enrolment	Av. Attend.
New South Wales	...	...	...	19,695	12,172	3,127	1,083
Victoria	...	...	...	7,107	† 3,500	289	...
Queensland	...	...	...	5,744	5,250	...	...
South Australia	...	...	...	4,332	3,938	314	...
Western Australia	...	...	...	2,007	*	...	...
Tasmania	...	...	...	614	267	...	...

\* Not available.

† Estimate.

8. **Expenditure on Technical Education.**—The expenditure on technical education in each State during the period 1906 to 1910 is shewn below :—

**EXPENDITURE ON TECHNICAL EDUCATION, 1906 to 1910.**  
(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1906 ...	26,764	21,444	6,803	7,663	7,931	2,650	73,255
1907 ...	33,568	22,322	9,610	8,006	7,940	2,418	83,864
1908 ...	51,814	26,839	10,720	7,856	9,264	2,215	108,708
1909 ...	61,452	27,039	13,589	12,742	9,422	3,209	127,453
1910 ...	71,002	32,314	20,612	13,476	*9,987	3,055	150,446

\* In addition a sum of £11,927 was spent in buildings.

The figures in the preceding table represent an expenditure of about 8d. per head of the population of the Commonwealth, as compared with 11s. 6d. per head spent on maintenance for primary education, and clearly shew that technical education has not attained its proper place in the educational organisation of Australia.

### § 7. Diffusion of Education.

1. **General Education.**—A rough indication of the state of education of the people is obtained at each Census under the three headings, "read and write," "read only," and "cannot read." The grouping of the whole population, exclusive of aborigines, in these three divisions is given for each Census since 1861 :—

**EDUCATION AT CENSUS PERIODS, 1861 to 1901.**  
(COMMONWEALTH.)

State.		1861.	1871.	1881.	1891.	1901.
N.S. Wales ...	(Read & write	188,543	296,741	507,067	835,562	1,071,935
	Read only...	46,024	56,391	49,372	43,539	29,728
	Cannot read	116,293	149,866	193,386	244,853	253,183
Victoria ...	(Read & write	328,362	478,464	653,346	908,490	998,010
	Read only...	57,351	70,953	47,950	32,794	21,852
	Cannot read	152,915	180,781	160,270	198,556	181,208
Queensland ...	(Read & write	17,152	74,940	136,436	276,381	376,294
	Read only...	3,680	12,080	13,657	14,618	11,737
	Cannot read	9,227	33,084	63,432	102,719	110,098
South Australia	(Read & write	72,190	117,349	200,057	236,514	290,748
	Read only...	18,535	21,509	15,267	9,571	8,283
	Cannot read	36,105	46,768	64,541	74,346	64,126
West. Australia	(Read & write	7,683	14,166	19,684	34,254	150,099
	Read only...	1,301	2,717	2,430	2,061	3,107
	Cannot read	5,853	7,902	7,594	13,467	30,918
Tasmania ...	(Read & write	48,282	55,941	74,966	103,138	133,579
	Read only...	13,136	13,946	9,606	6,287	3,907
	Cannot read	28,559	29,441	31,133	37,242	34,989
Commonwealth	(Read & write	662,212	1,037,601	1,591,556	2,394,339	3,020,665
	Read only...	140,027	177,596	138,282	108,870	78,614
	Cannot read	348,952	447,842	520,356	671,183	674,522

The proportion in the Commonwealth of the various classes per 10,000 of the population is shewn below for each Census period:—

**PROPORTION OF EDUCATED AND ILLITERATE PER 1000 PERSONS, 1861 to 1901.**  
(COMMONWEALTH.)

Division.	1861.	1871.	1881.	1891.	1901.
Read and write ... ..	5,752	6,239	7,073	7,543	8,004
Read only ... ..	1,217	1,068	615	343	208
Cannot read ... ..	3,031	2,693	2,312	2,114	1,788

2. **Education of Children.**—The figures in the preceding tables refer to the entire population of the Commonwealth, and as the age constitution of those dwelling in the various portions of Australia underwent considerable modifications during the period dealt with, a far more reliable test of the diffusion of education will be obtained by a comparison of the Census returns in regard to children of school age. For comparative purposes this has been taken to include all children in the group over five and under fifteen years of age, and the degree of education of these at each Census will be found below:—

**EDUCATION OF CHILDREN AT CENSUS PERIODS, 1861 to 1901.**  
(COMMONWEALTH.)

State.	1861.	1871.	1881.	1891.	1901.
N.S. Wales ... (Read & write	34,040	68,776	121,735	196,240	251,187
... (Read only ...	20,345	26,886	25,100	21,375	15,934
... (Cannot read	25,472	32,924	41,663	48,580	60,734
Victoria ... (Read & write	42,268	122,739	170,713	201,199	236,515
... (Read only ...	25,518	39,636	25,249	15,656	13,128
... (Cannot read	19,341	29,490	21,421	27,441	27,765
Queensland ... (Read & write	2,156	12,698	33,317	62,402	95,635
... (Read only ...	1,534	6,104	7,019	7,580	5,955
... (Cannot read	1,629	6,015	9,615	16,257	18,827
South Australia (Read & write	15,485	30,608	46,630	58,291	69,451
... (Read only ...	8,748	12,432	7,926	4,618	4,229
... (Cannot read	6,907	10,074	12,483	17,988	15,480
West. Australia (Read & write	1,333	3,218	4,418	6,910	25,326
... (Read only ...	226	617	1,260	933	1,815
... (Cannot read	1,015	1,795	1,593	2,348	5,431
Tasmania ... (Read & write	11,919	17,335	17,188	24,007	32,890
... (Read only ...	2,848	4,143	4,108	2,974	1,795
... (Cannot read	4,581	6,663	6,606	8,829	8,475
Commonwealth (Read & write	107,201	255,374	394,001	549,049	711,004
... (Read only ...	59,219	89,818	70,662	53,136	42,856
... (Cannot read	58,945	86,961	93,381	121,443	136,712

In the case of Tasmania full details for the years 1861 and 1871 are not available, and the figures for those years are approximate. The variation in degree of education will be more readily seen by reducing the foregoing figures to the basis of proportion per 10,000, and the results so obtained are embodied in the following table, a glance at which is sufficient to demonstrate the remarkable strides that at least the lower branches of education have made since 1861. In that year, only 47 per cent. of the children of school

age could read and write, while 26 per cent. were illiterate. The returns for 1901 shew that the proportion of those who could read and write had increased to nearly 80 per cent., while the totally ignorant had declined by nearly one-half.

**EDUCATION OF CHILDREN (AGES 5 to 15) PER 10,000 AT CENSUS PERIODS,  
1861 to 1901.**

(COMMONWEALTH.)

State.		1861.	1871.	1881.	1891.	1901.
N.S. Wales ...	{ Read & write	4,263	5,349	6,458	7,372	7,662
	{ Read only...	2,547	2,091	1,332	803	486
	{ Cannot read	3,190	2,560	2,210	1,825	1,852
Victoria ...	{ Read & write	4,851	6,397	7,853	8,236	8,526
	{ Read only...	2,929	2,066	1,162	641	473
	{ Cannot read	2,220	1,537	985	1,123	1,001
Queensland ...	{ Read & write	4,053	5,116	6,670	7,236	7,942
	{ Read only...	2,884	2,460	1,405	879	495
	{ Cannot read	3,063	2,424	1,925	1,885	1,563
South Australia	{ Read & write	4,973	5,763	6,956	7,206	7,790
	{ Read only...	2,809	2,341	1,182	571	474
	{ Cannot read	2,218	1,896	1,862	2,223	1,736
West Australia	{ Read & write	5,179	5,716	6,076	6,780	7,775
	{ Read only...	878	1,096	1,733	916	557
	{ Cannot read	3,943	3,188	2,191	2,304	1,668
Tasmania ...	{ Read & write	6,160	6,160	6,160	6,704	7,620
	{ Read only...	1,472	1,472	1,472	830	416
	{ Cannot read	2,368	2,368	2,368	2,466	1,964
Commonwealth	{ Read & write	4,757	5,910	7,061	7,588	7,984
	{ Read only...	2,628	2,078	1,266	734	481
	{ Cannot read	2,615	2,012	1,673	1,678	1,535

**3. Education as shewn by Marriage Registers.**—Another common method of testing the spread of education is to compare the number of mark signatures with the total number of persons married during each year of a series. The percentage of males and females signing with a mark to the total persons married in the Census years 1861 to 1901, and during each of the last seven years, was as follows. The figures refer to marriages in the Commonwealth in respect of which information was obtainable.

**ILLITERACY AS SHOWN BY MARRIAGE SIGNATURES, 1861 to 1910.**

(COMMONWEALTH.)

Year.	Proportion Signing with Marks of Total Persons Married.						
	Males.	Females.	Total.	Year.	Males.	Females.	Total.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
1861 ...	18.50	30.69	24.60	1905 ...	0.91	0.93	0.92
1871 ...	10.58	16.40	13.49	1906 ...	0.92	0.86	0.89
1881 ...	4.34	6.78	5.56	1907 ...	0.81	0.70	0.76
1891 ...	2.27	2.40	2.34	1908 ...	0.71	0.73	0.72
1901 ...	1.35	1.29	1.32	1909 ...	0.65	0.62	0.64
1904 ...	0.95	0.91	0.93	1910 ...	0.56	0.59	0.58

The table shews that there has been a large diminution in illiteracy, and judging from the figures for the last few years the proportion bids fair to practically disappear. Up to 1891 there was a higher proportion of illiteracy amongst females, but from 1901 onwards, generally speaking, the opposite condition prevailed.

## § 8. Miscellaneous.

1. **Scientific Societies.**—(a) *Royal Societies.* Despite the trials and struggles incidental to the earlier years of the history of Australia, higher education and scientific advancement were not lost sight of. Thus the origin of the Royal Society of New South Wales dates as far back as 1821, when it was founded under the name of the Philosophical Society of Australasia, Sir Thomas Brisbane being its first president. Scientific work was fitfully carried on by means of a society whose name varied as the years rolled on. It was called the Australian Philosophical Society in 1850. In 1856 the old Australian Society merged into a resuscitated Philosophical Society of New South Wales, and its papers were published up to 1859 in the Sydney Magazine of Science and Art (2 vols. 1858-9). Its present title dates from 1866. Some of the papers of the old Philosophical Society were published in 1825 under the title of "Geographical Memoirs of New South Wales," (Barron Field) and contain much that is interesting in regard to the early history of Australia. One volume containing the Transactions of the Philosophical Society of New South Wales (1862-65) was published in 1866. The journal of the Society did not begin to bear a serial number, however (vol. 1), until the year 1867. "Transactions of the Royal Society of New South Wales" was issued in 1867, the title of the series being altered to "Journal" in 1876. Up to the end of 1910 forty-four volumes had been published. The exchange list comprises 434 kindred societies. At the present time the library contains about 21,000 volumes and pamphlets, valued at over £7500. Income and expenditure for the year ended 31st March, 1911, were £1462 and £1357 respectively. The Society had on the same date 343 members.

The Royal Society of Victoria dates from 1854, in which year the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria were founded. These were amalgamated in the following year under the title of the Philosophical Institute of Victoria, whilst the society received its present title in 1860. The first volume of its publications dates from 1855. The earlier publications dealt largely with Physics, later on Biology became prominent, while at present a large number of papers deal with Geology. Up to 1910 fifty-five volumes of publications had been issued. The Society exchanges with 304 kindred bodies. The constitution of the society states that it was founded "for the promotion of art, literature, and science," but for many years past science has monopolised its energies. The library contains over 8000 volumes. Since its inception the society has received about £18,000 in annual subscriptions, while Government aid has been given to the amount of about £10,000.

The inaugural meeting of the Royal Society of Queensland was held on the 8th January, 1884, under the presidency of the late Sir A. C. Gregory. The society was formed "for the furtherance of the natural and applied sciences, especially by means of original research." Shortly after its formation it received an addition to its ranks by the amalgamation with it of the Queensland Philosophical Society, which was started at the time when Queensland became a separate colony. At latest date the members numbered 105; publications issued, 24 volumes; library, 3780 volumes; societies on exchange list, 142. Up to 1910 the total subscriptions reached about £1800.

The present Royal Society of South Australia grew out of the Adelaide Philosophical Society, which was founded in 1853, its object being the discussion of all subjects connected with science, literature and art. Despite this programme, the tendency of the papers was distinctly scientific, or of a practical or industrial nature. With the advent of the late Professor Tate the sphere of activity of the society was considerably enlarged. Permission to assume the title of "Royal" was obtained in 1879, the society thenceforward being known as "The Royal Society of South Australia." In 1903 the society was incorporated. In 1910 the number of members was 84. Receipts to the end of 1910 were £485, the Government endowment being £226. Up to 1910 the society had issued thirty-five volumes of proceedings and three volumes of memoirs. The exchange list numbers about 148.

The Royal Society of Tasmania, for horticulture, botany, and the advancement of science, dates from 14th October, 1843, although Sir John Franklin had started a scientific society as early as 1838. The names of Captains Ross and Crozier, of H.M.S. *Erebus* and *Terror*, appear in the list of the first corresponding members. The society, which, since 1844, has published annual volumes of proceedings, possesses 139 members, exchanges with 77 kindred bodies, and has a library containing about 2000 volumes.

(b) *Other Scientific Societies.* The Australasian Association for the Advancement of Science, founded in 1888, has its headquarters in Sydney. Its receipts to date were about £11,000, including Government aid to the amount of £3000. The library contains 4000 volumes, valued at £400. Up to date eleven volumes of proceedings have been issued. The exchange list numbers 286. The Linnean Society of New South Wales, with headquarters in Sydney, was founded in 1875, and possesses a library of 10,000 volumes, valued at £6000. Up to date thirty-six volumes of proceedings have been issued. Exchanges number 188. This society maintains two investigators engaged in research work, and owes its development almost entirely to the benefactions of Sir William Macleay. The British Astronomical Association has a branch in Sydney, and in some of the States the British Medical Association has branches.

The principal scientific society in Western Australia is the Natural History and Science Society of Western Australia. This society has grown out of the Mueller Botanic Society, founded in July, 1897. The objects of the society are the study of natural history and pure science, promoted by periodical meetings and field excursions, the maintenance of a library, and the issue of reports of proceedings. It numbers at present 117 members whose subscriptions form its main source of revenue. Government aid in the past has ranged from £7 to £75 per annum, the subsidy paid in 1910 being £12 10s. Since its establishment the society has issued nineteen journals of proceedings. Its publications are exchanged with numerous institutions at home and abroad.

In addition to the societies enumerated above, there are various others in each State devoted to branches of scientific investigation, particulars respecting which are not at present available.

2. **Libraries.**—As far as can be ascertained the total number of libraries in the Commonwealth at the latest available date was about 1500, and the number of books contained therein is estimated at nearly three millions. In each of the capital cities there is a well-equipped Public Library, the Melbourne institution especially comparing very favourably with similar institutions in other parts of the world. The following statement gives the number of volumes in the Public Library of each city :—

#### METROPOLITAN PUBLIC LIBRARIES.

City.	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney ...	219,981	...	10,908	230,889
Melbourne ...	200,562	27,721	...	228,283
Brisbane ...	36,667	...	...	36,667
Adelaide ...	71,534	25,476	...	97,010
Perth ...	82,180	7,050	...	89,230
Hobart ...	17,000	...	...	17,000

The maintenance and control of the lending branch of the Public Library at Sydney were transferred in 1909 to the Municipal Council. At the end of December, 1910, the books numbered 29,244.

The Mitchell Library in Sydney consists of 60,000 volumes and pamphlets, principally relating to Australasia, bequeathed in 1907 by Mr. D. S. Mitchell, together with an

endowment of £70,000. The testator stipulated that the regulations of the British Museum were to be adopted as far as practicable, hence the library is the resort of specialists.

The Launceston Mechanics' Institute in Tasmania possesses a library of 27,000 volumes.

The number of libraries in receipt of State or municipal aid, together with the estimated number of books contained therein, is given below for each State:—

#### SUBSIDISED LIBRARIES AND BOOKS THEREIN.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.
Number of libraries ...	430	490	210	204	225	27
Estimated number of books	892,000	1,044,000	282,000	430,000	191,000	117,000

The figures in the above table can be taken only as approximations, as in many instances returns were not received from various institutions.

3. **Museums.**—The Australian Museum in Sydney, founded in 1836, is the oldest institution of its kind in Australia. In addition to possessing a fine collection of the usual objects to be met with in kindred institutions, the Museum contains a very valuable and complete set of specimens of Australian fauna. The cost of construction of the building was £59,000. The number of visitors to the institution last year was 146,000, and the average attendance on week-days 380, and on Sundays 844. The expenditure for 1910 amounted to £10,299, of which £6452 was absorbed by salaries and allowances, and £3847 by purchases and miscellaneous. A valuable library containing over 16,000 volumes is attached to the Museum. Representative collections, illustrative of the natural wealth of the country, are to be found in the Agricultural and Forestry Museum, and the Mining and Geological Museum. The latter institution prepares collections of specimens to be used as teaching aids in country schools. The "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, and the Museum of Normal and Morbid Anatomy, connected with the University, and the National Herbarium and Botanical Museum at the Sydney Botanic Gardens, are also accessible to the public. There is a fine Technological Museum in Sydney, with branches in five country centres, the metropolitan institution containing over 100,000 specimens. Valuable research work has been undertaken by the scientific staff in connection with oil and other products of the eucalyptus. The number of visitors at the Technological Museums during 1910 was nearly 240,000.

The National Museum at Melbourne, devoted to Natural History, Geology, and Ethnology, is located in the Public Library building. The expenditure for specimens, furniture, etc., in 1910 was £750, and salaries and wages £2440. The Industrial and Technological Museum, opened in 1870, contains upwards of 55,000 specimens. There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens. Well equipped museums of mining and geological specimens are established in connection with the Schools of Mines in the chief mining districts.

The Queensland Museum dates from the year 1871, but the present building was opened in January, 1901. Since its inauguration the Government has expended on the institution a sum of £70,597, of which buildings absorbed £16,615, purchases £22,171, and salaries £31,811. The number of visitors during the year was 59,516, of whom 22,709 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and Brisbane, opened in 1892. The total expenditure on the institution up to the end of 1909 was £6054, of which £2847 was spent on buildings.

Under the Public Library Act of 1884 the South Australian Institute ceased to exist, and the books contained therein were divided amongst the Museum, Public Library, and



Art Gallery of South Australia, and the Adelaide Circulating Library. The Museum was attended by 75,321 visitors in 1910.

The latest available returns shew that the Western Australian Museum contains altogether 49,000 specimens of an estimated value of £60,000. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions during the year numbered 81,000. The expenditure totalled £3736, of which salaries absorbed £2111.

There are two museums in Tasmania—The Tasmanian Museum at Hobart, and the Victoria Museum and Art Gallery at Launceston, both of which contain valuable collections of botanical and mineral products. The Tasmanian Museum received aid from the Government during last year to the extent of £500.

**4. Art Galleries.**—Information regarding the State collections of objects of art in the various capitals is in some cases very meagre, while the method of presentation does not admit of any detailed comparisons being made. The Art Gallery of New South Wales originated in the Academy of Art founded in 1871. Up to the end of 1910, the total expenditure was £259,000, of which works of art absorbed £104,000. The contents, which are valued at £136,000, comprise 366 oil paintings, 374 water colours, 515 black and white, 153 statuary and bronzes, and 353 ceramics, works in metal and miscellaneous. During 1910 the average attendance on week days was 548, and on Sundays 1897. The expenditure in 1910 amounted to £4550.

The National Gallery at Melbourne at the end of 1910 contained 531 oil paintings, 3581 objects of statuary, bronzes and ceramics, and 13,915 water-colour drawings, engravings, and photographs. The Gallery is situated in the same building as the Museum and Public Library, the total cost of construction being £229,000. At the end of 1910 the Ballarat Art Gallery contained 217 oil paintings, and 164 water colours, etc., while there are some valuable works of art in the smaller galleries at Bendigo, Geelong, and Warrnambool.

The Art Gallery at Adelaide dates from 1880, when the Government expended £2000 in the purchase of pictures, which were exhibited in the Public Library building in 1882. The liberality of private citizens caused the Gallery to rapidly outgrow the accommodation provided for it in 1889, at the Exhibition Building, and on the receipt of a bequest of £25,000 from the late Sir T. Elder, the Government erected the present building, which was opened in April, 1900. The Gallery also received a bequest of £16,500 in 1903 from the estate of Dr. Morgan Thomas, and of £3000 in 1907 from Mr. David Murray. At the latest available date there were in the Gallery 215 oil paintings, 124 water colours, 163 black and white, 112 engravings and etchings, 24 statuary, and 593 miscellaneous works in metal, etc., the whole being valued at upwards of £47,000. Building and site are valued at upwards of £31,000. Visitors during the year 1910 numbered 92,449.

The foundation stone of the present Art Gallery at Perth in Western Australia was laid in 1901, the building and site being valued at £60,000. The collection comprises 97 oil paintings, 41 water colours, 217 engravings and black and white, 262 statuary, and miscellaneous metal works, etc., of a total value of £15,000.

In Tasmania the Art Gallery at Hobart was opened in 1887. Its present contents consist of 96 paintings and 81 etchings and black and white drawings. Buildings and site are valued at £30,000. The number of visitors during the year on week days averages 62,000, and on Sundays 30,000.

The Art Gallery at Launceston was erected in 1888 at a cost of £5000, and opened on the 2nd April, 1891. Only a small proportion of the contents belong to the Gallery, the bulk of the pictures being obtained on loan. At latest date there were on view 80 oil

paintings and 44 water colours valued at £5000. The total value of buildings and site is estimated at £12,100. The average annual attendance is 36,000, and for Sundays 10,000.

5. **State Expenditure on all Forms of Educational Effort.**—The expenditure from the Consolidated Revenue in each State on all forms of educational and scientific activity during each of the last five financial years was as follows:—

**EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1906-7 to 1910-11.**

State.		1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
		£	£	£	£	£
New South Wales	{ Total	£ 941,654	1,055,197	1,104,077	1,149,422	1,221,175
	{ Per head	12/2	13/4	13/9	13/11	14/11
Victoria ...	{ Total	£ 842,071	872,655	925,368	953,499	1,003,251
	{ Per head	13/7	13/10	14/5	14/7	15/8
Queensland ...	{ Total	£ 366,635	399,291	423,080	510,388	503,021
	{ Per head	13/7	14/6	14/11	17/4	17/-
South Australia...	{ Total	£ 193,346	210,712	238,376	231,584	275,671
	{ Per head	10/4	10/7	11/7	11/1	13/9
Western Australia	{ Total	£ 217,036	219,176	221,377	222,861	251,071
	{ Per head	16/6	16/6	16/4	16/-	18/6
Tasmania ...	{ Total	£ 68,777	73,242	81,182	87,603	92,036
	{ Per head	7/8	8/1	8/10	9/7	9/8
Commonwealth						
	{ Total	£ 2,629,519	2,830,273	2,993,460	3,155,357	3,346,225
	{ Per head	12/8	13/4	13/10	14/3	15/4

The comparatively heavy expenditure in Queensland for 1909-10 is due to the inclusion of an expenditure of £70,000 in connection with the establishment of the University.

## SECTION XXIII.

## PUBLIC JUSTICE.

## § 1. Police.

1. **Introductory.**—In previous issues of the Year Book a résumé was given of the evolution of the police force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales, but considerations of space preclude its inclusion in the present volume.

In general terms the police forces of Australia may be said to be satisfactory both in regard to physique and intelligence, while as regards methods of prevention and detection of crime it is believed that the system in vogue here compares very favourably with those of the older-settled countries of the world.

2. **Strength of Police Force.**—The strength of the police force in each State during the five years ended 1910 was as follows. It may be mentioned that the police forces are entirely under State control, but, by arrangement, the Commonwealth Government utilises their services in various directions, such as the collection of Commonwealth electoral rolls, etc.

## POLICE FORCES IN THE COMMONWEALTH, 1906 to 1910.

State.	Area of State in Sq. Miles.	1906.	1907.	1908.	1909.	1910.
New South Wales	310,372	2,342	2,381	2,417	2,435	2,447
Victoria...	87,884	1,518	1,546	1,552	1,598	1,605
Queensland ...	670,500	883	923	960	966	957
South Australia ...	380,070	422	444	429	442	465*
Northern Territory	523,620	507	488	492	475	474
Western Australia	975,920	229	226	232	234	234
Tasmania ...	26,215					
Commonwealth	2,974,581	5,901	6,008	6,082	6,150	6,182

\* Including 23 police in Northern Territory.

The figures for New South Wales for 1910 are exclusive of sixty-two "black trackers," i.e., natives employed in detection of offenders in outlying districts, and five female

searchers. In Queensland there were ninety-three native police. The South Australian returns for 1910 are exclusive of eighteen "black trackers," and twenty-four native police in the Northern Territory. There are also fifty-one "black trackers" in Western Australia and three female searchers not included in the table.

(i.) *Average Number of Inhabitants to each Police Officer.* The average number of inhabitants to each officer in each State during the same period is shewn below. In considering these figures allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States.

### INHABITANTS TO EACH POLICE OFFICER, 1906 to 1910.

(COMMONWEALTH.)

State.	No. of Persons per Sq. Mile, 1911 Census.	Inhabitants to each Police Officer.				
		1906.	1907.	1908.	1909.	1910.
New South Wales ...	5.31	633	659	659	659	667
Victoria ...	14.97	812	807	819	804	799
Queensland ...	0.90	606	587	575	585	622
South Australia ...	0.46	910	884	949	900	863
Western Australia ...	0.29	516	536	543	571	572
Tasmania ...	7.29	787	814	801	787	816
Commonwealth ...	1.50	698	698	703	703	707

The above figures naturally shew a great disparity in the relative numbers of the population protected by each police officer in the various States, and also in the relative area of territory to each officer. Western Australia and South Australia exhibit the largest figures in the latter respect, this, of course, being due to the fact that extensive areas in each State are as yet unpeopled by white settlers.

**3. Duties of the Police.**—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by various functionaries. As far as the statistician is concerned, it is found that the expert local knowledge possessed by the police renders their services in the collection of such returns as those relating to the agricultural, pastoral, and manufacturing industries, private schools, etc., more than ordinarily valuable. Then, again, the fact that their services are enlisted by such widely different departments as those dealing with mines, stock, agriculture, elections, registrations of births, deaths, and marriages, forestry, fisheries, explosives, old-age pensions, lunacy, public works, labour, etc., greatly enhances their general alertness by widening the range of their experience. Occasionally the objection is heard in some quarters that these special tasks involve some degree of sacrifice of ordinary routine duties, but that the general intelligence of the Australian police is adequate to the obligation to perform these tasks, besides being most creditable, results in a great saving of the public money.

**4. Cost of Police Forces.**—The expenditure from Consolidated Revenue on the police forces in each State during the five years 1906 to 1910 is shewn in the following table. Cost of buildings has been excluded from the return.

## COST OF POLICE FORCES IN THE COMMONWEALTH, 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£
New South Wales ...	434,934	462,804	466,994	472,718	504,146
Victoria ...	312,941	306,130	306,263	320,881	337,670
Queensland ...	176,086	202,184	207,043	220,344	244,945
South Australia ...	85,016	87,374	96,979	98,214	96,769
Western Australia ...	126,276	125,440	124,518	119,111	120,420
Tasmania ...	35,086	37,152	39,105	39,740	40,408
Commonwealth ...	1,170,339	1,221,084	1,240,902	1,270,958	1,344,358

The total for New South Wales includes £23,000 payment to Police Superannuation Fund; similar payments are included also in Victoria and Queensland. The cost per head of the population in each State for the period 1906 to 1910 was as follows:—

## COST OF POLICE PER INHABITANT, 1906 to 1910.

(COMMONWEALTH.)

State.	1906.	1907.	1908.	1909.	1910.
	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ...	5 9	5 11	5 11	5 11	6 2
Victoria ...	5 1	4 11	4 10	5 0	5 3
Queensland ...	6 7	7 5	7 6	7 8	8 3
South Australia ...	4 6	4 6	4 11	5 0	4 10
Western Australia ...	9 9	9 7	9 5	8 10	8 11
Tasmania ...	3 11	4 2	4 4	4 4	4 3
Commonwealth ...	5 9	5 11	5 11	5 11	6 2

The relatively high cost per head in Queensland and Western Australia is due to the fact that there are in those States extensive areas of sparsely settled country, in which mounted patrols have to be maintained.

## § 2. Lower (Magistrates') Courts.

1. **Introductory.**—In considering the criminal returns of the various States due allowance must be made on account of several factors, such as the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State, the breach of which renders a person liable to fine or imprisonment, must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces, and the age constitution and distribution of the State's population, also influence the results. In any consideration of criminal returns, due weight should also be given to the prevalence of undetected crime, but information on this point can only be obtained for the State of Victoria. It may be mentioned that each State has its own separate judicial system, the Commonwealth jurisdiction being confined to the High Court of Australia, which is largely a Court of Appeal intermediate to the Privy Council, although it has also original jurisdiction, and the Commonwealth

Court of Arbitration and Conciliation. Full particulars regarding the judicial power of the Commonwealth will be found in Chapter III. of the Commonwealth Constitution (see page 26).

**2. Powers of the Magistrates.**—In New South Wales there is no general limit to the powers of the magistrates in regard to offences punished summarily, their authority depending in each case on the statute which creates the offence and gives them jurisdiction. Except in the case of a very few statutes, and excluding cumulative sentences, the power of sentence is limited to six months. Imprisonment in default of payment of fine is regulated by a scale limiting the maximum period according to the sum ordered to be paid, but in no case exceeding twelve months. Actions for debt and damage within certain limits also come within magisterial jurisdiction. In cases of debts, liquidated or unliquidated, the amount recoverable is not exceeding £50 before a court constituted of a stipendiary or police magistrate at certain authorised places, and not exceeding £30 at any other place before a court constituted of a stipendiary or police magistrate or two or more justices of the peace. The amount in actions of damage is limited to £10, but may extend to £30 by consent of parties.

In Victoria the civil jurisdiction of magistrates is restricted to what may be designated ordinary debts, damages for assault, restitution of goods, etc., where the amount in dispute does not exceed £50. No definite limit is fixed to the powers of the magistrates on the criminal side, and for some offences sentences up to two years may be imposed. The proportion of long sentences is, however, comparatively small.

In Queensland, generally speaking, the maximum term of imprisonment which justices can inflict is six months, but in certain exceptional cases, such as offences against sections 233 and 445 of the criminal code (betting-houses and illegally using animals), sentences of twelve months may be imposed. No limit exists as to the extent to which cumulative sentences may be applied, but in practice the term is never very lengthy.

In South Australia, under the Minor Offences Act, magistrates can impose sentences up to six months, and under the Summary Convictions Act, up to three months. The Police Act of 1869 gives power to sentence up to one year, with hard labour, in the case of incorrigible rogues, while under the Quarantine Act of 1877, and the Lottery and Gaming Act of 1875, sentences of two years may be imposed.

Under the Petty Sessions Act of 1867, in Tasmania, any person charged with having committed, or with having aided or abetted in the commission of an offence in regard to property of a value not exceeding £10, may, on conviction, for a first offence, before two or more justices in Petty Sessions, be imprisoned for any term not exceeding one year, and for a term not exceeding two years for a second or subsequent offence.

**3. Persons Charged at Magistrates' Courts.**—The total number of persons who were charged before magistrates in each State is given below for the five years 1906 to 1910:—

**PERSONS CHARGED BEFORE MAGISTRATES IN THE COMMONWEALTH,  
1906 to 1910.**

State.	1906.	1907.	1908.	1909.	1910.
New South Wales ...	65,197	67,183	66,233	64,502	73,960
Victoria ...	48,244	60,687	58,778	52,658	52,060
Queensland ...	18,849	18,621	19,687	19,824	22,104
South Australia ...	6,324	6,347	6,589	7,332	8,328
Western Australia ...	14,478	13,968	12,685	12,961	13,260
Tasmania ...	6,391	6,258	7,048	6,831	7,079
Commonwealth...	159,483	173,064	171,020	164,108	176,791

In explanation of the large increase shewn by Victoria for the year 1907 it is stated that the returns of summons were inflated by prosecutions under the new Licensing and Pure Food Acts and the Amending Education Act.

The figures given in the tabulation above include, of course, a number of people who were wrongly charged, and statistically are not of great importance. The actual number of convictions in connection with the persons who appeared before the lower courts in each year of the period 1906 to 1910 is, therefore, given hereunder. A separate line is added shewing the committals to higher courts.

### CONVICTIONS AND COMMITTALS AT MAGISTRATES' COURTS, 1906 to 1910.

(COMMONWEALTH.)

State.			1906.	1907.	1908.	1909.	1910.
New South Wales	...	{ Convictions	54,809	58,103	57,630	55,767	63,671
		{ Committals	1,286	1,130	1,015	1,081	1,176
Victoria	...	{ Convictions	37,740	46,731	43,705	38,801	38,555
		{ Committals	584	561	577	580	551
Queensland	...	{ Convictions	15,987	16,056	17,710	17,584	19,805
		{ Committals	440	464	417	442	455
South Australia...	...	{ Convictions	5,249	5,352	5,664	6,324	7,229
		{ Committals	168	105	89	111	117
Western Australia	...	{ Convictions	12,181	11,803	10,695	10,910	11,433
		{ Committals	182	193	187	177	192
Tasmania	...	{ Convictions	5,449	5,334	5,903	5,930	6,250
		{ Committals	55	46	63	44	48
All States	...	{ Convictions	131,415	143,379	141,307	135,316	146,943
		{ Committals	2,715	2,499	2,348	2,435	2,539

In connection with the variations in convictions at magistrates' courts, it may be noted that deductions in regard to the prevalence of lawlessness based on the totals alone must be largely qualified by several considerations. For example, as previously stated, the passing of new legislation may result in a sudden addition to the crop of convictions, which would not necessarily imply a corresponding growth in lawlessness. Further, the activity of the police in regard to the strict compliance with certain legislation, such as that dealing with Sunday observance, food standards, liquor trade, etc., may cause considerable variations in the returns. Hence references to the spread or otherwise of crime should more correctly depend on a consideration of the convictions for serious crime at the lower courts, and committals to, and convictions at, superior courts.

**4. Convictions for Serious Crime.**—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be lost sight of that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliaments. Cases of drunkenness and minor breaches of good order which, if they can be said to come within the category of crime at all, at least do so in a very different sense to some other offences, also help to swell the list. The following table has, therefore, been prepared for the purpose of shewing the convictions at magistrates' courts for what may be regarded as the more serious offences, i.e., against the person and property, either separately or conjointly, and forgery and offences against the currency:—

**CONVICTIONS FOR SERIOUS CRIMES AT MAGISTRATES' COURTS, 1906 to 1910.**  
(COMMONWEALTH.)

State.	1906.	1907.	1908.	1909.	1910.
New South Wales ...	4,971	4,799	4,779	4,764	5,224
Victoria ...	2,879	2,672	2,794	2,626	2,673
Queensland ...	2,035	1,334	1,433	1,526	1,479
South Australia ...	437	499	540	513	487
Western Australia ...	1,215	1,301	1,143	1,074	996
Tasmania ...	522	438	575	548	609
Commonwealth ...	12,059	11,043	11,264	11,051	11,468

Owing to a reclassification adopted by Queensland in 1907, a large number of offences have been transferred from the class "Offences against the Person" to "Offences against Good Order," hence the falling-off shewn by that State in the last four years.

Compared with the population the above figures give the following results per 10,000 inhabitants:—

**CONVICTIONS FOR SERIOUS CRIME PER 10,000 INHABITANTS, 1906 to 1910.**  
(COMMONWEALTH.)

State.	1906.	1907.	1908.	1909.	1910.
New South Wales ...	32.9	31.0	30.2	29.7	32.0
Victoria ...	23.5	21.6	22.2	20.4	20.8
Queensland ...	38.2	24.8	26.1	27.0	25.0
South Australia ...	11.5	12.9	13.6	12.5	12.1
Western Australia ...	46.7	49.6	43.1	39.6	36.7
Tasmania ...	29.2	24.4	31.6	29.8	31.9
Commonwealth ...	29.5	26.6	26.6	25.6	26.2

**5. Decrease in Crime.**—The figures quoted in the preceding table show that there has been a considerable decrease in crime during the last five years, while if the comparison be carried back to 1881 the position is seen to be still more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, and 1910. Only the more serious offences, particularised in the preceding paragraph, have been taken into consideration.

**RATE OF CONVICTIONS FOR SERIOUS CRIME IN THE COMMONWEALTH.**

Year.	Convictions per 10,000 Persons.					
1881 ...	...	...	...	...	...	69.3
1891 ...	...	...	...	...	...	44.8
1901 ...	...	...	...	...	...	29.1
1910 ...	...	...	...	...	...	26.2

**6. Need of Statistic of Distinct Persons.**—The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially in minor offences, such as drunkenness, petty larcenies, etc., in which the same offender appears before the court many times in the course of the year. In a few of the States it is possible to obtain the number of distinct persons arrested, but there are no means of arriving at the total distinct persons convicted before the magistrates in any State. The forms submitted to and adopted by the Conference of Statisticians in



1906 provided for information as to separate persons convicted, irrespective of whether they were arrested or summoned, but the information is not yet sufficiently complete to be of value for statistical comparisons.

**7. Causes of Decrease in Crime.**—The statistics given shew that there has been a considerable decrease in crime throughout Australia. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later.

Attempts have been made to account for this decline: *e.g.*, advance in education, enlightened penological methods, etc. Much depends upon what is meant by education. Many classed in census statistics as "educated" can barely read and write. In this connection, moreover, it ought not to be forgotten that collaterally with the introduction of ordinary intellectual education certain people have departed from their pristine virtues. The deterrent effect of punishment, in respect of many offences, notably drunkenness, vagrancy, petty larcenies, etc., appears to be almost negligible. In general, punishment has declined in brutality and severity, and has improved in respect of being based to a greater extent upon a scientific penological system, though in this latter respect there is yet much to be desired. Recent advances in penological methods will be referred to in a subsequent section. Here it will be sufficient to remark that under the old régime, a prisoner on completion of a sentence in gaol was simply turned adrift on society, and in many cases sought his criminal friends, and speedily qualified for readmission to the penitentiary. Frequently he was goaded to this by mistaken zeal on the part of the police, who took pains to inform employers of the fact of a man having served a sentence in gaol. For a long time any assistance to discharged prisoners was in the hands of private organisations, such as the Salvation Army Prison Gate Brigade, but in some of the States, and notably in New South Wales, the authorities themselves look after the welfare of discharged prisoners in the way of finding work, providing tools, etc.

Improvements in the means of communication and identification have been responsible for some of the falling-off noticeable in the criminal returns, the introduction of the Bertillon system having contributed to certainty of identification. In his report for the year 1910 the Inspector-General of Police in New South Wales states that "criminals have a wholesome dread of the finger print system, and I have not the slightest doubt that it is one of the principal causes of the diminution of serious crimes." Part of the improvement may no doubt be referred also to the general amelioration in social conditions that has taken place during the last fifty years.

**8. Drunkenness.**—The number of cases of drunkenness and the convictions recorded in connection therewith during the period 1906 to 1910 will be found in the following table:—

**CASES AND CONVICTIONS—DRUNKENNESS, 1906 to 1910.**

(COMMONWEALTH.)

State	1906.		1907.		1908.		1909.		1910.	
	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales	25,399	25,253	28,255	28,109	27,976	27,817	27,495	27,363	27,542	27,380
Victoria	14,029	9,529	14,783	9,151	13,102	6,596	12,436	7,025	12,719	7,272
Queensland	7,493	7,473	9,066	9,002	9,203	9,185	9,109	9,102	10,870	10,849
South Australia	2,483	2,460	2,838	2,735	3,063	3,024	3,481	3,455	4,383	4,323
Western Australia	3,588	3,505	3,591	3,535	3,506	3,441	4,007	3,955	4,550	4,506
Tasmania	459	454	535	531	543	527	709	690	761	741
Commonwealth	53,451	48,674	59,068	53,063	57,393	50,590	57,237	51,590	60,825	55,071

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is certainly open to doubt.

The convictions for drunkenness per 10,000 of the population during each of the years from 1906 to 1910 are given hereunder :—

### CONVICTIONS FOR DRUNKENNESS PER 10,000, 1906 to 1910,

(COMMONWEALTH.)

State.	1906.	1907.	1908.	1909.	1910.
New South Wales ...	167.3	181.3	175.9	170.4	167.7
Victoria ...	77.9	73.9	52.4	54.7	56.7
Queensland ...	140.3	167.0	167.1	161.1	183.4
South Australia ...	64.7	70.9	76.0	84.1	107.7
Western Australia ...	134.8	134.8	129.8	146.0	166.2
Tasmania ...	25.4	29.6	29.0	37.5	38.8
Commonwealth ...	119.1	127.7	119.5	119.4	126.0

The convictions for drunkenness taken by themselves are not an altogether satisfactory test of the relative sobriety of the inhabitants of each State, inasmuch as several important factors must be taken into consideration. The age constitution of the people, for example, is by no means identical in each State, Western Australia having by far the largest proportion of adult males. The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, the likelihood of arrest or summons for drunkenness obviously being greater in the more densely populated regions, and lastly, allowance must be made for the attitude of the magistracy, the police, and the public generally in regard to the offence.

It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee, and the general habit of the people. Throughout the greater part of Europe, tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shewing the consumption of spirits, wine, and beer per head of the population has, with the exception of the figures relating to the Commonwealth, been compiled from returns prepared by the British Board of Trade. The figures quoted for the Commonwealth refer to the year 1910, and for the other countries mentioned cover the quinquennium 1905-9. Owing to the abolition by the Customs Department of records of interstate trade it is no longer possible to give accurate returns for the separate States.

CONSUMPTION OF ALCOHOLIC BEVERAGES IN VARIOUS COUNTRIES.

Country.	Consumption per Head of Population.			Country.	Consumption per Head of Population.		
	Spirits.	Wine.	Beer.		Spirits.	Wine.	Beer.
	Imp. Galls.	Imp. Galls.	Imp. Galls.		Imp. Galls.	Imp. Galls.	Imp. Galls.
United Kingdom...	0.86	0.27	27.42	Denmark ...	2.29	...	20.50
Commonwealth ...	0.79	0.5	11.69	German Empire	1.48	1.19	23.74
New Zealand ...	0.78	0.15	9.87	Holland ...	1.39	0.35	...
Cape of Good Hope	0.56	1.85	1.56	Belgium ...	1.08	1.04	48.58
Canada ...	0.87	0.10	5.48	France ...	1.33	34.52	7.96
Russia ...	1.15	...	1.15	Switzerland ...	0.77	15.26	15.22
Norway...	0.57	...	4.06	Italy ...	0.43	25.84	0.32
Sweden...	1.33	...	12.80				

9. **Treatment of Drunkenness as Crime.**—Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened mental state in the company of professional malefactors, doubtless tends to swell the ranks of criminals and certainly tends to lower his self-respect, while examination of the prison records in New South Wales some years ago disclosed the fact that over 40 per cent. of the gaol population had commenced their criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is as far as possible kept from association with the more evilly-disposed. With regard to drunkards, however, the Comptroller of Prisons in New South Wales advocates the entire abandonment of the system of repeated fine or imprisonment in favour of a course of hospital treatment, and this has to some extent been accomplished by the Inebriates Act of 1900 and 1909 under which habitual drunkards may be detained for long periods. The Comptroller-General of Prisons in Queensland states in his report for the year 1907 that "the drunken habit in many cases is merely one of many symptoms which jointly indicate the existence of a graver condition than simple habitual drunkenness."

10. **Remedial Treatment of Inebriates.**—Legislation has been passed in each State providing for the commitment of inebriates to special Government institutions, but so far New South Wales and Victoria are the only States in which such institutions have been established. The laws in the various States are as follows:—New South Wales, Inebriates Act 1900; Victoria, Inebriates Act 1904; Queensland, Inebriate Institutions Act of 1896; South Australia, Inebriates Act of 1881; Western Australia, Lunacy Act 1903, Pt. iv., Habitual Drunkards; Tasmania, Inebriates Act 1885, Inebriate Hospitals Act 1892. Curative work was first undertaken by the Government of New South Wales in 1907. The institutes are connected with the gaols, and, naturally, custodial measures are still a strong feature in their management; nevertheless the results so far have been encouraging. In Victoria an institute purporting to be wholly remedial was founded in 1907, and up to the end of December, 1910, 341 patients had been admitted. It may be mentioned that there are private retreats in each State, but these are not officially subsidised or inspected.

**11. Treatment of Habitual Offenders.**—In New South Wales the Habitual Criminal Act of 1905 gives judges the power of declaring a prisoner, after a certain number of sentences, to be an habitual criminal, and as such to be detained until, in the opinion of the authorities, he is fit to be at large. At the end of 1910 there were thirty-six persons in prison under this Act. The Indeterminate Sentences Act came into force in Victoria in July, 1908, and on the 30th June, 1911, twenty-nine males and seven females were under detention in Pentridge and in the Female Penitentiary, as well as thirteen youths in Castle-maine reformatory prison. Somewhat similar Acts are in force in South Australia and Tasmania. The provisions of the Habitual Criminals Amendment Act of 1907 were put into force in South Australia in 1909, and ten criminals declared to be habitual offenders were in confinement in the Labour Prison at the end of 1910. Legislation of this character has not yet been adopted in Queensland, where the Comptroller-General states that the class of offenders suitable for its operation is very limited. Naturally it will be some time before the effect of these measures on the prevalence of crime can be estimated. The Comptroller-General of Prisons in New South Wales states, however, that the system has exercised a wholesome deterrent effect on the criminal who is not a prisoner.

In illustration of the need for an Habitual Offenders Act to deal with professional criminals, the following statement culled from the report for 1909 of the Inspector-General of Police in New South Wales will be found of interest. In cases of breaking and entering, thirty-three persons committed 165 offences, or an average of five each. Of the total number, one man committed thirty-two offences, another thirteen, and another twelve. In simple larcenies, 139 persons committed 528 offences, one man being responsible for fifty-two charges, another fifty-six, and another seventeen. Under "burglaries" one man committed five offences; under "false pretences" one man committed nineteen, and another fifteen offences.

**12. Treatment of First Offenders.**—In all the States and in New Zealand statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows: New South Wales, 1894; Victoria, 1890; Queensland and South Australia, 1887; Western Australia, 1892; Tasmania and New Zealand, 1886. The method of procedure is practically the same in all cases, *i.e.*, with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognisances being entered into for his good behaviour for a certain period. In practice, this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

**13. Children's Courts.**—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, Western Australia, and New Zealand within the last few years, while Children's Courts, although not under that name, are practically provided for by the State Children's Act of 1895 and 1900 in South Australia. The object of these Courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court. This subject is dealt with in detail in the section dealing with Public Hygiene. (See Section xxx.)

**14. Committals to Superior Courts.**—In a previous section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connection allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1906 to 1910, with the proportion of such committals per 10,000 of the population. The rates are shewn on a separate line.

**COMMITTALS TO SUPERIOR COURTS (COMMONWEALTH), 1906 to 1910.**

State.				1906.	1907.	1908.	1909.	1910.
New South Wales	...	...	No.	1,334	1,172	1,060	1,135	1,233
			Rate	8.8	7.2	6.7	7.1	7.6
Victoria	...	...	No.	584	561	577	580	551
			Rate	4.8	4.5	4.6	4.5	4.3
Queensland	...	...	No.	440	464	417	442	455
			Rate	8.3	8.6	7.6	7.8	7.7
South Australia	...	...	No.	168	105	89	111	117
			Rate	4.4	2.7	2.2	2.7	2.9
Western Australia	...	...	No.	182	193	187	177	192
			Rate	7.0	7.4	7.0	6.5	7.1
Tasmania	...	...	No.	55	51	63	44	48
			Rate	3.1	2.8	3.5	2.4	2.5
Commonwealth	...	...	No.	2,763	2,546	2,393	2,489	2,596
			Rate	6.8	6.0	5.7	5.8	5.9

The above figures shew that there has been a decrease in serious crime, and, if the comparison be carried farther back, it will be found that the improvement has been considerable. This will be evident from an examination of the following figures, which shew the rate of committals per 10,000 persons in Australia at various periods since 1861:—

**RATE OF COMMITTALS IN AUSTRALIA, 1861 to 1910.**

Year ...	...	...	...	...	1861.	1871.	1881.	1891.	1901.	1910.
Committals per 10,000 inhabitants	...	...	...	...	22	14	12	11	8	6

The decline in proportion to population since 1861 has therefore been about 73 per cent.

**§ 3. Superior Courts.**

1. **Convictions at Superior Courts.**—The total number of convictions at superior courts, together with the rate per 10,000 of the population, is shewn below for each of the years 1906 to 1910:—

**CONVICTIONS AT SUPERIOR COURTS (COMMONWEALTH), 1906 to 1910.**

State.				1906.	1907.	1908.	1909.	1910.
New South Wales	...	...	No.	707	629	614	619	546
			Rate	4.7	4.0	3.9	3.9	3.3
Victoria	...	...	No.	339	368	365	352	354
			Rate	2.8	3.0	2.9	2.7	2.7
Queensland	...	...	No.	249	268	292	345	376
			Rate	4.7	4.6	4.8	6.1	6.4
South Australia	...	...	No.	92	74	68	86	101
			Rate	2.4	1.9	1.7	2.1	2.5
Western Australia	...	...	No.	150	176	106	87	95
			Rate	5.8	6.7	4.0	3.2	3.5
Tasmania	...	...	No.	32	39	29	24	27
			Rate	1.8	2.2	1.6	1.3	1.4
Commonwealth	...	...	No.	1,569	1,554	1,474	1,513	1,499
			Rate	3.8	3.7	3.5	3.5	3.4

In considering the above figures allowance must be made for the various factors enumerated in a preceding paragraph. Only when this is done will the comparatively unenviable pre-eminence of Western Australia in regard to serious crime be explained. Tasmania, it will be noted, shews by far the smallest proportion of serious crime, while the figures available shew that the island State is relatively the smallest consumer of alcoholic beverages. That a definite causal relation exists between the figures shewn by the respective tables is not, however, obvious.

**2. Offences for which Convictions were Recorded at Superior Courts.**—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1906 to 1910. Owing to lack of uniformity in the presentation of the returns for the several States the information is confined to the chief offences against the person only. The figures quoted refer to convictions in the Commonwealth during the period dealt with.

### CONVICTIONS FOR SERIOUS CRIME, SUPERIOR COURTS, 1906 to 1910.

(COMMONWEALTH.)

Offences.	1906.	1907.	1908.	1909.	1910.
Murder and attempts at ...	35	26	26	24	31
Manslaughter ...	21	19	20	21	15
Rape and crimes of lust ...	70	90	60	59	77
Other offences against the person ...	239	255	278	260	250

While the convictions for manslaughter and crimes of lust are identical in the opening and closing years of the period dealt with, those for murder declined by about 11 per cent. The general total of convictions for all offences against the person shews a decline since 1901 of about 10 per cent.

**3. Capital Punishment.**—The table below gives the number of executions in each State during the period 1906 to 1910:—

### EXECUTIONS (COMMONWEALTH), 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
New South Wales ...	1	3	...	...	...
Victoria ...	...	...	1	...	...
Queensland ...	3	1	...	2	1
South Australia ...	1	...	1	...	3
Western Australia ...	1	1	2	1	1
Tasmania ...	...	...	...	...	...
Commonwealth ...	6	5	4	3	5

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in some of the Australian States, the penalty has been but sparingly inflicted during the last few years. Juries are

reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

During the period 1861 to 1880 the average number of executions in the Commonwealth was nine, from 1881 to 1900 the average was six, while for the period 1901 to 1910 the figure stood at five.

#### § 4. Prisons.

1. **Prison Accommodation and Prisoners in Gaol.**—The table below shews the number of prisons in each State and the accommodation therein at the end of 1910:—

**PRISONS AND PRISON ACCOMMODATION (COMMONWEALTH), 1910.**

State.	Number of Prisons.	Accommodation in—		Prisoners at End of Year.
		Separate Cells.	Wards.	
New South Wales ... ..	30	2,193	759	1,235
Victoria ... ..	18	1,489	727	859
Queensland ... ..	12	561	416	527
South Australia ... ..	15	812	292	*269
Western Australia ... ..	27	719	110	†311
Tasmania ... ..	2	270	94	72
Commonwealth ... ..	104	6,044	2,398	3,273

\* Including three gaols with 23 prisoners in the Northern Territory. † Exclusive of 404 aborigines.

The number of prisoners in gaol, exclusive of debtors, at the 31st December in each of the years 1906 to 1910, is given below. A separate line is added in each instance shewing the proportion per 10,000 of the population.

**PRISONERS IN GAOL (COMMONWEALTH), 1906 to 1910.**

State.	1906.	1907.	1908.	1909.	1910.
New South Wales ... { Number	1,519	1,437	1,417	1,333	1,235
... { Proportion	10.1	9.3	9.0	8.3	7.6
Victoria ... { Number	927	916	875	844	859
... { Proportion	7.6	7.4	7.0	6.5	6.7
Queensland ... { Number	507	501	493	516	527
... { Proportion	9.5	9.3	9.0	9.1	8.9
South Australia ... { Number	237	255	247	276	269
... { Proportion	6.2	6.6	6.2	6.7	6.7
Western Australia ... { Number	402	502	351	365	311
... { Proportion	15.5	19.1	13.2	13.5	11.5
Tasmania ... { Number	89	89	96	81	72
... { Proportion	5.0	5.0	5.3	4.4	3.8
Commonwealth ... { Number	3,681	3,700	3,479	3,415	3,273
... { Proportion	9.0	8.9	8.2	7.9	7.5

From the preceding table it will be seen that the proportion to population of prisoners in gaol has fallen considerably during the last five years, while, if the comparison be carried farther back, the position is seen to be still more favourable, the prisoners in gaol in the Commonwealth numbering as much as 16 per 10,000 of the population in 1891.

**2. Improvement of Penological Methods.**—During recent years Australia, in common with most other civilised countries, has introduced considerable modifications and improvements in methods of prison management. Under the old régime punishment partook more or less of the character of reprisal for wrongdoing, and the idea of constituting the prison as a reformatory agency was in the background. But of recent years there has been an earnest attempt at effecting a moral reformation in the unfortunates who lapse into crime. This aspect of prison management has been specially prominent in New South Wales. As pointed out by the Comptroller-General of Prisons of that State, there are, however, certain directions in which improvements can be made. The danger and absurdity of sending drunkards to gaol has already been alluded to in a previous section, while present methods of dealing with vagrancy, and particularly with prostitution, have proved quite inadequate. A step in the right direction has however been taken in New South Wales, where, under the Prisoners' Detention Act, prisoners afflicted with certain diseases may be detained until the medical authorities pronounce them to be free from contagion. Unfortunately the Act does not apply to persons imprisoned in default of paying fines.

The general reorganisation of the New South Wales prison system may be said to date from the year 1896. Briefly stated, the chief reforms which have been introduced are as follows:—(a) Prevention of contamination consequent on evil association by the adoption of the "restricted association" scheme, under which prisoners are allowed to have as little intercourse with each other as possible, each prisoner having a separate cell, and mingling with other prisoners only at exercise or at work, and then under close supervision. (b) Careful classification of prisoners to avoid contact of minor or first offenders with the more hardened. (c) Better prison fare. (d) Abolition of solitary confinement in dark cells. (e) Lighting cells up to a reasonable hour at night and allowing well-conducted prisoners the privilege of reading interesting books. (f) Abolition of the practice of sending young children to gaol. (g) Attempt at scientific treatment of the habitual offender. (h) Special penitentiary for women prisoners under system of restricted association. (i) Provisions for helping prisoners on leaving gaol to find work through the agency of the Discharged Prisoners' Aid Society. Assistance in this direction is also given by numerous clerical and lay helpers.

In 1902 the system of finger-print identification of criminals was introduced, and by the year 1903 bureaux had been established in the various States for the exchange of records. Very successful results have attended the introduction of the system.

Space will not permit of more than a passing reference to the improvements brought about in prison management in the other States. In Victoria there is an excellent system of classification and allocation of prisoners to different gaols, while at the important penal establishment at Pentridge a careful segregation into no less than five distinct classes is carried out. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed.

Queensland prisons have been considerably modernised during the last few years. The prison for females at Brisbane has been built on the radiating plan, and embodies the latest ideas in penological methods. Classification of prisoners has been fully carried out in the male and female divisions of Brisbane prison, and at the Stewart's Creek penal establishment. The construction of the buildings does not, however, permit of the plan being adopted in its entirety in all Queensland prisons. It is stated by the Comptroller-General of Prisons that the classification adopted has already resulted in a decrease in the total number of female prisoners received.

Unusual circumstances have combined to keep crime at a low point in South Australia. In the first place there was never any transportation of criminals to the State,



while in the earlier years of its history South Australian lawbreakers were transported elsewhere. The present system was drafted mainly on English and European lines by the late W. R. Boothby, C.M.G., and under his directions and that of his successor has been found to work admirably. Excellent work for the benefit and assistance of discharged prisoners is performed by the Prisoners' Aid Association.

There is no special information available with regard to the prison systems of Western Australia and Tasmania.

### § 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during each of the last five years are given in the table hereunder. As pointed out previously, the jurisdiction of the courts is by no means uniform in the various States. The figures, however, possess a certain value as indicating that, in comparison with other years, resort to litigation is on the decline in Australia.

#### LOWER COURTS.—CIVIL CASES, COMMONWEALTH, 1906 to 1910.

State.			1906.	1907.	1908.	1909.	1910.
New South Wales	...	{ Cases No.	20,573	26,548	30,472	32,637	30,059
		{ Amount £	*	63,350	83,372	87,432	77,700
Victoria	...	{ Cases No.	25,320	26,255	32,005	36,894	29,902
		{ Amount £	123,625	123,732	157,334	162,393	146,284
Queensland	...	{ Cases No.	10,311	10,304	12,016	12,244	11,951
		{ Amount £	36,408	35,576	42,863	43,363	45,432
South Australia	...	{ Cases No.	11,844	11,737	13,068	13,627	13,845
		{ Amount £	29,123	31,804	39,627	41,811	45,380
Western Australia	...	{ Cases No.	10,109	9,930	10,570	10,681	9,598
		{ Amount £	62,556	57,000	59,863	50,261	42,636
Tasmania	...	{ Cases No.	3,673	3,568	4,120	4,868	3,620
		{ Amount £	22,095	19,574	25,717	30,855	29,199
Commonwealth	...	{ Cases No.	81,830	88,342	102,251	110,951	98,975
		{ Amount £	†273,807	331,036	408,776	416,115	386,631

\* Not available. † Exclusive of New South Wales.

The figures just given represent the returns from Petty Sessions Courts in New South Wales and Victoria, the Petty Debts Cases in Queensland, the Local Courts of South Australia and Western Australia, and the Court of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during each of the years 1906 to 1910.

The New South Wales returns are to some extent defective, as the figures quoted for amount of judgments include in the case of the Common Law jurisdiction of the Supreme Court the total judgment signed, while in the case of the other States the figures refer to sums actually adjudged after trial. For New South Wales, also, the transactions of

district courts refer to the total amounts sued for, and not the sums actually awarded after trial. Statistically the chief importance of the table consists in the fact that it shews a marked decline in litigiousness in Australia.

### SUPERIOR COURTS.—CIVIL CASES, 1906 to 1910.

(COMMONWEALTH.)

State.			1906.	1907.	1908.	1909.	1910.
New South Wales	...	{ Causes No.	915	652	694	800	519
		{ Amount £	266,896	267,830	356,210	397,681	269,518
Victoria	...	{ Causes No.	620	694	783	733	711
		{ Amount £	50,194	46,070	77,081	59,785	53,180
Queensland	...	{ Causes No.	118	129	148	142	138
		{ Amount £	11,551	8,845	11,574	40,964	18,336
South Australia...	...	{ Causes No.	32	29	27	34	23
		{ Amount £	2,207	8,986	5,378	14,081	799
Western Australia	...	{ Causes No.	595	541	449	414	342
		{ Amount £	52,770	67,946	63,649	60,537	39,721
Tasmania	...	{ Causes No.	179	193	185	257	210
		{ Amount £	6,072	7,235	10,433	8,487	11,879
Commonwealth	...	{ Causes No.	2,459	2,238	2,286	2,380	1,943
		{ Amount £	399,690	406,912	524,325	581,535	393,433

3. **Divorces and Judicial Separations.**—The number of divorces and judicial separations in each State during the period 1906 to 1910 is shewn below :—

### DIVORCE AND JUDICIAL SEPARATIONS, 1906 to 1910.

(COMMONWEALTH.)

State.			1906.		1907.		1908.		1909.		1910.	
			Divorces	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations
New South Wales	...	...	175	10	223	14	195	15	275	12	254	6
Victoria	...	...	123	2	134	...	151	1	138	1	141	...
Queensland	...	...	14	3	12	1	11	2	16	...	21	...
South Australia	...	...	3	1	11	...	8	...	12	1	3	1
Western Australia	...	...	18	...	16	...	19	...	13	1	27	1
Tasmania	...	...	5	...	8	...	7	...	12	1	5	1
Commonwealth	...	...	338	16	404	15	391	18	466	16	451	9

The average annual number of divorces and judicial separations in the Commonwealth at decennial periods from 1871 to 1901 is given hereunder :—

### DIVORCES AND JUDICIAL SEPARATIONS, 1871 to 1910.

		1871-1880.	1881-90.	1891-1900.	1901-10
Commonwealth	...	29	70	358	401

The bulk of the divorces and judicial separations refer, as the table shews, to New South Wales and Victoria, the Acts of 1892 and 1889 in the respective States making the separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year. The comparison is, however, quite valueless, as there is no necessary connection between the figures. Some value would attach to a comparison of the number of divorces with the number of married people living, but the latter information cannot be obtained with accuracy except at Census periods.

4. **Probates.**—The number of probates and letters of administration granted, together with the value of the estates concerned, is shewn below for each State for the period 1906 to 1910:—

### PROBATES AND LETTERS OF ADMINISTRATION, COMMONWEALTH, 1906 to 1910.

State		1906	1907.	1908.	1909.	1910.
New South Wales	{ Number	2,852	3,084	3,094	3,185	3,336
	{ Value £	7,529,437	7,563,499	7,838,572	11,142,065	8,834,934
Victoria	{ Number	3,982	4,156	4,345	4,069	4,128
	{ Value £	6,424,738	6,860,143	7,128,085	6,480,376	7,480,949
Queensland	{ Number	602	1,160	706	679	704
	{ Value £	1,794,742	1,670,184	1,376,255	1,508,883	1,652,691
South Australia	{ Number	1,020	975	1,025	1,115	1,121
	{ Value £	2,041,280	1,923,954	2,105,351	1,939,509	2,422,519
Western Australia	{ Number	476	433	455	413	492
	{ Value £	544,245	1,154,126	955,995	939,318	868,638
Tasmania	{ Number	343	414	346	361	375
	{ Value £	862,222	841,227	1,023,629	722,011	797,439
Commonwealth	{ Number	9,275	10,222	9,971	9,822	10,156
	{ Value £	19,196,664	20,013,133	20,427,887	22,732,165	22,007,170

As may naturally be expected, the figures in the above table giving the value of property left each year, shew considerable variations.

5. **Bankruptcies.**—The returns in bankruptcy during each of the last five years are given hereunder.

For several reasons comparisons drawn from the figures in the following table are of little value. In the first place, the statements of assets and liabilities are notably unsatisfactory, particularly in regard to the former. Then, again, there is wide dissimilarity in regard to the laws in force in the various States and the method of procedure thereunder in connection with bankruptcy. Further, there are no means of knowing how many persons in each State who were in a bankrupt condition made private arrangements with their creditors either personally or by intervention of a solicitor. The figures quoted in the table exclude the private arrangements in Victoria and South Australia, and the liquidations in Queensland and Tasmania.

## BANKRUPTCIES, COMMONWEALTH, 1906 to 1910.

State.		1906.	1907.	1908.	1909.	1910.
New South Wales ...	{ Number	406	333	356	381	352
	{ Liabilities £	179,740	219,669	322,850	168,169	176,088
	{ Assets £	93,201	152,454	185,507	82,563	119,377
Victoria ...	{ Number	517	448	514	370	359
	{ Liabilities £	231,328	196,879	179,050	129,627	132,841
	{ Assets £	81,144	53,849	62,998	96,041	54,381
Queensland ...	{ Number	307	236	303	323	214
	{ Liabilities £	45,583	42,348	70,064	63,321	44,475
	{ Assets £	7,045	8,475	10,031	34,541	12,691
South Australia ...	{ Number	93	99	105	108	76
	{ Liabilities £	59,412	59,681	142,450	64,775	77,471
	{ Assets £	44,781	33,029	92,719	42,340	44,195
Western Australia ...	{ Number	126	113	100	86	79
	{ Liabilities £	59,364	48,927	49,485	31,791	30,967
	{ Assets £	22,012	29,174	17,423	19,252	14,169
Tasmania ...	{ Number	5	7	1	5	1
	{ Liabilities £	2,340	7,529	...	3,903	29,368
	{ Assets £	1,440	1,756	...	954	68,183
Commonwealth ...	{ Number	1,454	1,236	1,379	1,273	1,081
	{ Liabilities £	578,267	575,033	763,899	461,586	491,210
	{ Assets £	249,623	278,737	368,678	277,691	312,996

6. **High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a Federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction, but so far its activities have been confined principally to the latter form. The powers of the court are defined in Chapter III. of the Constitution Act and in the Judiciary Acts of 1903, 1906, 1907, and 1910. At present the court consists of a Chief Justice and four other judges. Sittings of the court are held in the capitals of the various States as occasion may require. The following statement shews the transactions of the High Court for the quinquennium 1906-10:—

## COMMONWEALTH HIGH COURT TRANSACTIONS, 1906 to 1910.

Items.	1906.	1907.	1908.	1909.	1910.
I. ORIGINAL JURISDICTION.					
Number of writs issued ...	23	38	30	27	28
Number of causes entered for trial ...	5	11	8	4	5
Verdicts for plaintiffs ...	5	7	4	3	1
Verdicts for defendants ...	1	4	5	1	2
Otherwise disposed of ...	6	17	11	17	23
Amount of judgments ...	£2,395	£1,092	£1,058	£182	£2,040
II. APPELLATE JURISDICTION.					
Number of appeals set down for hearing ...	93	72	87	76	51
Number allowed ...	42	34	31	40	34
Number dismissed ...	34	30	36	29	14
Otherwise disposed of ...	17	8	20	7	3
III. AMOUNT OF FEES COLLECTED.					
Amount in each year...	£566	£523	£558	£505	£437

### § 6. Cost of Administration of Justice.

The table below shews the expenditure from Consolidated Revenue during each of the last five years in connection with the administration of justice in each of the States. Expenditure on police and prisons has been separately shewn. With regard to the figures quoted for "other" expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large. Cost of buildings has been excluded from the return.

#### EXPENDITURE ON JUSTICE, COMMONWEALTH, 1906 to 1910.

State.				1906.	1907.	1908.	1909.	1910.
				£	£	£	£	£
New South Wales	...	...	Police	434,934	462,804	466,094	472,716	504,146
			Gaols	85,835	83,962	84,129	79,814	78,932
			Other	216,141	244,062	242,796	245,024	241,510
Victoria	...	...	Police	312,941	306,130	306,263	320,831	337,670
			Gaols	49,408	49,866	49,025	49,869	48,714
			Other	124,689	122,251	135,248	147,146	160,627
Queensland	...	...	Police	176,086	202,184	207,043	220,344	244,945
			Gaols	22,724	23,558	27,797	24,174	25,036
			Other	69,108	85,234	85,804	99,914	104,739
South Australia	...	...	Police	85,016	87,374	96,979	98,214	96,771
			Gaols	17,232	15,535	15,981	16,841	17,060
			Other	30,423	29,169	30,884	33,662	34,412
Western Australia	...	...	Police	126,276	125,440	124,518	119,111	120,420
			Gaols	32,719	32,206	32,638	28,536	27,228
			Other	64,607	61,533	69,761	66,072	69,772
Tasmania	...	...	Police	35,086	37,152	39,105	39,740	40,331
			Gaols	5,731	5,465	5,795	5,698	5,466
			Other	20,911	18,610	16,901	14,511	11,513
Commonwealth	...	...	Police	1,170,339	1,221,084	1,240,902	1,270,958	1,344,283
			Gaols	213,649	210,592	211,365	204,932	202,436
			Other	525,879	560,899	581,394	606,329	622,573

The expenditure shewn in the foregoing table is that expended by the State Governments only, and does not include expenditure in connection with the Federal High Court, which is shewn below for the period 1905-6 to 1910-11:—

#### EXPENDITURE OF FEDERAL HIGH COURT, 1906 to 1911.

Year.				Amount.	Year.				Amount.
				£					£
1905-6	...	...	...	15,272	1908-9	...	...	...	24,037
1906-7	...	...	...	20,383	1909-10	...	...	...	23,677
1907-8	...	...	...	23,230	1910-11	...	...	...	25,850

For the purposes of comparison the figures in the first table above have been reduced to a population basis, and the results are given in the table hereunder:—

## EXPENDITURE ON JUSTICE PER INHABITANT, COMMONWEALTH, 1906 to 1910.

State.				1906.	1907.	1908.	1909.	1910.
				s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	...	...	Police	5 9	5 9	5 11	5 11	6 2
			Gaols	1 2	1 1	1 1	1 0	1 0
			Other	2 10	3 1	3 1	3 1	2 11
Victoria	...	...	Police	5 1	4 11	4 10	4 11	5 3
			Gaols	0 10	0 9	0 9	0 9	0 9
			Other	2 0	2 0	2 2	2 3	2 6
Queensland	...	...	Police	6 7	7 6	7 6	7 10	8 3
			Gaols	0 10	0 10	0 10	0 10	0 10
			Other	2 7	3 2	3 1	3 6	3 6
South Australia	...	...	Police	4 6	4 6	4 11	4 9	4 10
			Gaols	0 11	0 10	0 10	0 10	0 10
			Other	1 7	1 6	1 7	1 8	1 9
Western Australia	...	...	Police	9 9	9 7	9 5	8 10	8 11
			Gaols	2 6	2 6	2 6	2 2	2 1
			Other	5 0	4 8	5 3	4 10	5 2
Tasmania	...	...	Police	3 11	4 2	4 4	4 4	4 3
			Gaols	0 8	0 7	0 8	0 7	0 7
			Other	2 4	2 1	1 10	1 7	1 2
Commonwealth	...	...	Police	5 9	5 9	5 10	5 11	6 2
			Gaols	1 0	1 0	1 0	0 11	0 11
			Other	2 7	2 8	2 9	2 10	2 10

The total expenditure in the Commonwealth in connection with the administration of justice has fallen from ten shillings per inhabitant in 1901 to nine shillings and elevenpence in 1910. Police expenditure has increased by about fivepence per head, the average for gaols is about threepence per head less, while the expenditure on courts and the remaining machinery of justice has fallen by threepence per head, during the same period.

## SECTION XXIV.

## PUBLIC BENEVOLENCE.

## § 1. Introductory.

1. **General.**—Charity and charitable effort in Australia may be classified under three headings, viz.:—(a) State; (b) public; (c) private. To the first belong all institutions wholly provided for by the State, such as the principal lunatic asylums in the various States, the Government hospitals in Western Australia, and the Government asylums for infirm in New South Wales. The second class comprises public institutions of two kinds, viz.:—(i.) Institutions partially subsidised by the State or State endowed, but receiving also private aid, and (ii.) those wholly dependent upon private aid. To the former division belong such institutions as the Melbourne and other large metropolitan hospitals. In the latter are included institutions established and endowed by individuals for the benefit of the needy generally. All charitable movements of a private or special character are included in the third group.

A more or less accurate statistical account is possible in classes (a) and (b), but in regard to (c) complete tabulation is, for obvious reasons, impossible. Moreover, public response to special appeals, and summary relief in kind, cannot be statistically recorded. Hospitals, orphanages, homes, benevolent asylums, etc., naturally attract the largest share of charitable aid. There are, nevertheless, numerous other and minor charities which mark the course and measure the amount of a considerable volume of private beneficence. In institutions which receive Government aid, management and finance are usually relegated to executive bodies, elected ordinarily on a democratic basis.

The distribution of wealth in the Australian Commonwealth, and the generally favourable conditions, as regards scope for the exercise of natural ability, operate to prevent the development of a permanent pauper class, and at the same time lessen in a dual way the burden of charity. This latter is brought about by the increase, on the one hand, of the number of people whose prosperity enables them to relieve the indigent and unfortunate, and by the reduction, on the other, of the number who need assistance. Enactments of State Legislatures have decreed short hours and a liberal holiday allowance for large numbers of persons engaged in industrial and other pursuits, and, even in occupations not covered by Act of Parliament, the general conditions of employment often provide a considerable amount of leisure. This, coupled with an equable climate, enables the community to spend much of its time in the open air, with resultant advantages to its physique and general health. No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. Moreover, although Old Age Pensions are paid by the Commonwealth, the payments are looked upon rather in the light of a citizen's right than as a charity. Reference to the Old Age Pensions will be found in § 3, Miscellaneous, chap. xxxiv.

To meet temporary conditions, or rather, what ought to be temporary conditions, various relief works have been started from time to time, in which the able-bodied who may be forced to seek official relief are required to make some return for the assistance afforded. In the past, attempts to relieve the unemployed have led to large expenditures, but at the present time the entire scheme of such relief is on an altogether more satisfactory footing.

In each of the States there are Government asylums for the care of the insane, and the condition of these unfortunates has been steadily ameliorated by the general advance in psychiatry.

Young children deprived of parental training and control are cared for and educated in "orphanages" and "industrial schools," and those who have been guilty of some specific offence, or who are beyond adequate parental control, are committed to "reformatories."

In common with other civilised communities, relief funds have from time to time been organised for famine-stricken territories (*e.g.*, China, India, etc.), or for places where plague, flood, fire, or earthquake has shewn the need of urgent relief. Statistical information in regard to this form of charity is not, however, available. It may be mentioned that the daily Press frequently accepts the duties of collectorship in charity appeals.

**2. Charity Reforms.**—The evident overlapping of charitable effort has on various occasions led to discussion regarding methods of collection and distribution of aid, and has, moreover, given rise to a desire for improved administration. In this connection, an important conference of representatives of charitable associations was held in Melbourne in September, 1907, with the object of systematically digesting the experiences of the committees of management of the various hospitals and kindred institutions. These obtain their revenue from State and municipal subsidies, from proceeds of concerts, entertainments, etc., from organised public collection, from private contributions and bequests, and from patients. Some of the institutions also have paid or honorary collectors. As a result of the investigations of this Conference, it was found (*a*) that institutions of a similar character were competing with each other; (*b*) that public aid was not effectively dispensed; (*c*) that public eleemosynary impulse was prejudiced by the circumstance that institutions primarily intended for the poor and needy were being utilised by people who could afford to pay for private relief, particularly in regard to medical or surgical treatment. As an outcome of the Conference, societies to prevent overlapping have been formed, resulting in improved economical collection and distribution of charitable aid.

Other proposed reforms aim at ascertaining the causes of poverty and crime, and finding the necessary palliative. Increased provision of better houses and workrooms and improved sanitation are advocated, together with more stringent legislative measures to enforce cleanliness and healthy modes of life. Further, Factories Legislation, Health Acts, etc., have enacted provisions for safeguarding dangerous machinery, and permitting only competent persons to be employed thereon.

**3. Difficulties of General Tabulation.**—Differences in the organisation of charities prevent uniform tabulation of statistics for all the States, but certain of the larger features of the statistics of benevolence have been combined for the whole Commonwealth. Combinations for the whole of Australia for the five years ended 1910 are given for hospitals, benevolent asylums, orphanages, and hospitals for the insane. Satisfactory tabulation for other charities is not yet possible. Where the combination has been for dissimilar periods the nearest years have been taken.



## § 2. The Larger Charities of Australia.

1. **Hospitals.**—Most of the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for consumptives, women, children, infectious diseases, incurables, etc. The number of hospitals in Australia, with the admissions, patients treated, deaths, and expenditure, is shewn in the following table. The "special" hospitals are included in the returns for 1906, but in subsequent years only general hospitals are tabulated, since the working of "special" institutions is not properly comparable with those which treat cases of all kinds. In 1909, the figures for assisted hospitals in Western Australia were included for the first time, not having been available for previous years.

### HOSPITALS IN THE COMMONWEALTH, 1906 to 1910.

Particulars.	1906.	1907.	1908.	1909.	1910.
Number of institutions ...	313	304	312	337	338
Number of beds ...	12,108	11,463	12,057	12,630	13,342
Admissions during year ...	99,308	98,031	107,292	112,102	119,091
Indoor patients treated ...	106,488	104,483	114,668	118,928	126,234
Deaths ...	7,627	8,005	8,560	8,814	8,946
Expenditure ...	£ 612,628	639,002	758,993	805,787	802,212

In addition to those admitted to the institutions there are large numbers of out-patients. The exact number of these cannot be given, but a rough estimate of distinct cases for 1910 places the total at about 280,000.

Fuller details of hospital statistics are given for 1910 in the table below, the States of the Commonwealth being shewn separately:—

### GENERAL HOSPITALS.—NUMBER, STAFFS, AND ACCOMMODATION OF HOSPITALS IN THE COMMONWEALTH, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
<b>Number of Hospitals—</b>							
Government ...	3	...	2	8	22	2	37
Other ...	135	48	73	6	28	11	301
<b>Total ...</b>	<b>138</b>	<b>48</b>	<b>75</b>	<b>14</b>	<b>50</b>	<b>13</b>	<b>338</b>
<b>Medical Staff—</b>							
Males ...	693	*	148	78	51	*	970†
Females ...	23	*	9	4	...	*	36†
<b>Total ...</b>	<b>716</b>	<b>*</b>	<b>157</b>	<b>82</b>	<b>51</b>	<b>*</b>	<b>1,006†</b>
<b>Nursing Staff &amp; Attendants—</b>							
Males ...	86	\$24	163	57	61	*	\$391†
Females ...	1,339	\$603	594	218	305	*	\$3,059†
<b>Total ...</b>	<b>1,425</b>	<b>\$1,769</b>	<b>757</b>	<b>275</b>	<b>366</b>	<b>*</b>	<b>\$4,592†</b>
<b>Accommodation—</b>							
Number of dormitories, etc.	874	441	480	104	151	111	2,161
Capacity in cubic feet	6,506,756	4,385,458	2,756,231	1,267,998	1,568,337	699,206	17,183,986
Number of beds ...	4,963	3,249	2,572	864	1,193	501	13,342
Cubic feet to each bed	1,311	1,350	1,072	1,468	2,611	1,396	1,288

\* Information not available. † Exclusive of Victoria and Tasmania. ‡ Exclusive of Tasmania.  
§ Inclusive, in Victoria, of 1142 paid staff: sexes not stated.

**GENERAL HOSPITALS.—PATIENTS TREATED IN HOSPITALS IN THE COMMON-WEALTH, 1910.**

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
<b>Indoor Relief: Distinct Persons Treated—</b>							
Males ... ..	29,078	15,983	17,077	4,119	5,773	2,826	74,856
Females ... ..	24,469	11,102	7,773	3,109	2,649	2,276	51,378
<b>Total ... ..</b>	<b>53,547</b>	<b>27,085</b>	<b>24,850</b>	<b>7,228</b>	<b>8,422</b>	<b>5,102</b>	<b>126,234</b>
<b>Inmates at beginning of Year—</b>							
Males ... ..	1,583	1,325	963	308	350	173	4,702
Females ... ..	1,203	832	478	206	179	143	3,041
<b>Total ... ..</b>	<b>2,786</b>	<b>2,157</b>	<b>1,441</b>	<b>514</b>	<b>529</b>	<b>316</b>	<b>7,743</b>
<b>Admissions &amp; Re-admissions during Year—</b>							
Males ... ..	27,495	14,658	16,114	4,205	5,423	2,654	70,549
Females ... ..	23,266	10,270	7,295	3,108	2,470	2,133	48,542
<b>Total ... ..</b>	<b>50,761</b>	<b>24,928</b>	<b>23,409</b>	<b>7,313</b>	<b>7,893</b>	<b>4,787</b>	<b>119,091</b>
<b>Discharges—Recovered:</b>							
Males ... ..	19,571	12,434	14,571	2,465	2,837	2,409	54,287
Females ... ..	18,275	9,024	6,649	2,070	1,436	1,902	39,356
<b>Total ... ..</b>	<b>37,846</b>	<b>*21,458</b>	<b>*21,220</b>	<b>4,535</b>	<b>4,273</b>	<b>*4,311</b>	<b>93,643</b>
<b>Relieved:</b>							
Males ... ..	4,920	†	†	1,039	1,750	†	7,709
Females ... ..	3,201	†	†	640	688	†	4,529
<b>Total ... ..</b>	<b>8,121</b>	<b>†</b>	<b>†</b>	<b>1,679</b>	<b>2,438</b>	<b>†</b>	<b>12,238</b>
<b>Unrelieved:</b>							
Males ... ..	761	193	324	257	189	15	1,739
Females ... ..	581	120	163	164	138	35	1,201
<b>Total ... ..</b>	<b>1,342</b>	<b>313</b>	<b>487</b>	<b>421</b>	<b>327</b>	<b>50</b>	<b>2,940</b>
<b>Not stated:</b>							
Males ... ..	...	371	91	9	107	57	635
Females ... ..	...	223	25	4	40	41	333
<b>Total ... ..</b>	<b>...</b>	<b>594</b>	<b>116</b>	<b>13</b>	<b>147</b>	<b>98</b>	<b>968</b>
<b>Deaths—</b>							
Males ... ..	2,077	1,699	1,061	427	508	193	5,965
Females ... ..	1,145	839	442	218	188	149	2,981
<b>Total ... ..</b>	<b>3,222</b>	<b>2,538</b>	<b>1,503</b>	<b>645</b>	<b>696</b>	<b>342</b>	<b>8,946</b>
<b>Inmates at End of Year—</b>							
Males ... ..	1,749	1,286	1,030	316	382	156	4,919
Females ... ..	1,267	896	494	218	150	145	3,170
<b>Total ... ..</b>	<b>3,016</b>	<b>2,182</b>	<b>1,524</b>	<b>534</b>	<b>532</b>	<b>301</b>	<b>8,089</b>
<b>Average Daily Number Resident—</b>							
Males ... ..	1,767	§	§	354	378	162	§
Females ... ..	1,390	§	§	237	180	119	§
<b>Total ... ..</b>	<b>3,157</b>	<b>2,262</b>	<b>1,521</b>	<b>591</b>	<b>558</b>	<b>281</b>	<b>8,370</b>

\* Including relieved.    † Included in recovered.    ‡ Cases relieved are included in those recovered, in Victoria, Queensland, and Tasmania.    § Information not available.

The revenue and expenditure of the institutions were as follows:—

**GENERAL HOSPITALS.—REVENUE AND EXPENDITURE, 1910.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.*	Tas.	C'wlth.
Revenue—	£	£	£	£	£	£	£
Fees of patients, etc. ...	45,281	17,657	17,102	5,432	13,400	9,516	108,388
Government grants ...	144,166	54,011	69,926	38,094	49,833	17,337	373,367
Other ...	120,665	101,672	62,937	11,318	21,877	2,950	321,419
Total ...	310,112	173,340	149,965	54,844	85,110	29,803	803,174
Expenditure—							
Salaries ...	105,793	136,737	58,761†	18,225	36,982	22,491	802,212
Maintenance ...	166,899	32,756	74,676	28,564	47,059	7,019	
Other, including buildings...	28,427		14,136	23,687			
Total ...	301,119	169,493	147,573	70,476	84,041	29,510	802,212

\* Exclusive of assisted hospitals. † Including rent.

**2. Hospitals for General and Special Cases.**—The tables here given refer to general hospitals. In addition there are hospitals for “specials,” (such as women's, children's, and infectious diseases hospitals), and institutions nearly allied to hospitals (such as consumptive sanatoria). In the first and second numbers of the Commonwealth Year Book, these were tabulated with general hospitals. Where the institutions carry on general hospital relief, they are still included with those establishments.

(i.) *New South Wales.* A feature of late years has been the establishment of hospitals in many country towns of growing importance. In 1898, there were 13 metropolitan and 97 country hospitals; in 1910 these had increased to 20 and 119. A Government hospital is established at Little Bay. There are four women's and one children's hospitals in the metropolis. Other leading institutions are the Thomas Walker Convalescent Hospital, Dental Hospital, Home for Incurables, Hospital for Infants and Asylum for Women and Children, Infants' Home, etc.

(ii.) *Victoria.* Special hospitals, not included in the above tabulation, comprise the Women's Hospital, with infirmary and midwifery departments, the Children's Hospital, the Hospital for Women and Children, two Consumptive Sanatoria (one a Government institution), Inebriates' Institute, Convalescent homes, etc.

(iii.) *Queensland.* There are four lying-in and two children's hospitals in Queensland, and a sanatorium; also two Lock hospitals, established under the provisions of the Contagious Diseases Act of 1868.

(iv.) *South Australia.* In connection with the leading general hospital in the metropolis, there is a consumptive home and infectious diseases block; there are also a children's hospital, two lying-in homes, sanatorium, convalescent home, home for incurables, etc.

(v.) *Western Australia.* The leading general hospitals are Government establishments. There is a lying-in establishment in connection with the metropolitan women's home. There are also homes for the dying and incurable, homes and rests for sailors, strangers, etc.

(vi.) *Tasmania.* Included in the Tasmanian general hospitals are two which pay particular regard to “special cases”; these are the hospital for contagious diseases

(a Government institution) and the convalescent home. Other important institutions of a general nature are the New Town charitable establishment, and the invalid dépôt.

**3. Benevolent and Destitute Asylums.**—A marked increase has taken place in the amount of aid bestowed upon the aged. Two elements, each of them independent of the growth of population, have influenced this increase. One is, that the general age of the community has advanced,—the large flow of immigration of fifty and sixty years ago having been mostly of persons in the prime of life; the other is the increased regard paid in all British communities to the well-being of the helpless. The result in Australia has been that numerous establishments have been founded for the housing and protection of such as are no longer able to care for themselves. The institutions are supported by Government and municipal aid, public subscriptions, charity performances, bequests, etc., and in many cases relatives of indigent and afflicted persons contribute to their maintenance.

The impossibility of an entirely satisfactory statistical tabulation in regard to all forms of charitable aid, is especially marked in the case of benevolent institutions, since the conditions under which they have been established in the different centres in the Commonwealth have caused divergence in their development and in the classes of cases treated by them. For example, in Western Australia the Home for Destitute Women includes a maternity ward, for which the statistics are not separately kept. Since the predominating function of the Institution is aid to the destitute, it has been included among benevolent asylums. In Victoria, nine of the hospitals are also Benevolent asylums, and they are included wholly under the former. In South Australia, the Destitute Asylum includes lying-in and children's departments.

#### BENEVOLENT INSTITUTIONS.—REVENUE AND EXPENDITURE, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'with.
<b>Revenue—</b>	£	£	£	£	£	£	£
Government aid ...	77,746	20,043	31,313	14,562	16,606	250	160,520
Municipal aid ...	...	912	...	...	...	...	912
Public subs., legacies, etc....	3,323	10,266	876	...	...	684	15,149
Fees ...	...	4,025	...	958	134	...	5,117
Other ...	7,075	3,768	394	267	92	...	11,596
<b>Total...</b>	<b>88,144</b>	<b>39,014</b>	<b>32,583</b>	<b>15,787</b>	<b>16,832</b>	<b>934</b>	<b>193,294</b>
<b>Expenditure—</b>							
Buildings ...	4,617	1,006	13	273	...	...	5,900
Maintenance ...	79,776	35,640	32,348	15,514	16,606	559	180,443
Other ...	3,714	216	179	...	...	96	4,205
<b>Total...</b>	<b>88,107</b>	<b>36,862</b>	<b>32,540</b>	<b>15,787</b>	<b>16,606</b>	<b>655</b>	<b>190,557</b>

(i.) *Government Asylums for the Infirm, New South Wales.* There are six of these institutions in New South Wales, with something over 4000 beds, generally nearly all in use. Inmates at the end of 1910 numbered 3325; deaths numbered 673; and the expenditure amounted to £65,221.

(ii.) *Benevolent Asylums, Victoria.* Besides the asylums attached to hospitals, there are eight institutions in Victoria. The daily average number indoors was 2328 for 1909-10, with 1076 distinct cases of outdoor relief. Deaths numbered 438. The total expenditure was £36,862, and receipts £39,014—£20,043 from Government and £18,971 from other sources.

(iii.) *Benevolent Asylums, Queensland.* There are four institutions in Queensland, with 1262 beds. The total number in the asylums during 1910 was 1646, with a daily average of 1082. Deaths numbered 175. Expenditure amounted to £32,606, and receipts to £32,650, of which £31,380 was Government aid.

(iv.) *Destitute Asylum, Adelaide.* Outside of hospitals and lunatic asylums the destitute of South Australia are dealt with and relieved at the Destitute Asylum, Adelaide. The institution includes lying-in and children's departments. In the asylum the average number of inmates in 1909-10 was 350. There were sixty-nine deaths during the year. Expenditure totalled £6566. In addition, £9432 was dispensed through the institution for outdoor relief of the destitute in both metropolitan and rural districts.

(v.) *Homes for the Destitute, Western Australia.* There are four of these homes in Western Australia supported by public funds. Attached to the Perth Women's Home is a lying-in department. Outdoor relief to the poor and aged is given, the amount expended being included in expenditure in the above table. More than fifteen hundred cases were dealt with during 1909. There were ninety-eight deaths.

(vi.) *Charitable Establishments, Tasmania.* There are two principal Government charitable establishments in Tasmania. Beds numbered 315 in 1910. The total number of persons treated was 555, of whom 64 died. The daily average number resident was 235. Total expenditure was £4509, receipts amounting to the same sum, of which £4125 was contributed by the State.

**4. Orphanages, Industrial Schools, etc.**—The organisation of charitable effort varies greatly in regard to orphans and waifs. In many institutions shelter and some form of industrial training is offered to destitute children of all classes, whether orphans or not, while some of those styled orphanages do not confine their relief to orphans strictly so called. The figures in the next table are those for institutions where, it is believed, the principal effort is on behalf of those who are really orphans:—

#### ORPHANAGES IN COMMONWEALTH, 1906 to 1910.

Particulars.	1906.	1907.	1908.	1909.	1910.
Number of institutions ... ..	38	38	38	42	42
Admissions ... ..	1,333	1,465	1,393	1,613	1,626
Total number of inmates during year ...	4,868	5,081	4,078	5,150	5,331
Deaths ... ..	15	17	19	14	22
Expenditure ... ..	£ 61,098	62,439	65,154	61,088	72,882

(i.) *New South Wales.* The care of destitute and neglected children is entrusted to the State Children's Relief Board, whose officers are charged with a strict supervision regarding the welfare of the children and the relation to them by those to whom they are boarded out. Useful trades and profitable occupations are taught, and many of the children become useful members of society. The number of children under the board's supervision in 1910-11 was 4498. The board's expenditure in 1910-11 was £90,352, or £20 17s. per child.

There are also thirteen orphanages, with about 800 persons under care. Deaths are but one or two annually, and the yearly expenditure fluctuates between £7300 and £10,800.

New South Wales had in 1910 three reformatory institutions—the Carpenterian State Reformatory, and the "Sobraon" State Training Ship for boys, the enrolment for 1910 being 56 and 407 respectively; and the Girls' State Industrial School, where for the same year the enrolment was 133.

The training ship attained very satisfactory results. In forty years more than 5000 boys were dealt with, and the records shew that 98 per cent. of these have developed into good citizens. In 1911, the "Sobraon" was purchased by the Commonwealth, to be used in connection with naval training. The boys were placed in the Mittagong Farm Homes and the Brush Farm Reformatory. To the Carpenterian Reformatory are sent boys who have been convicted in the courts, whom it is desired to keep apart from other prisoners, and who are taught useful trades.

(ii.) *Victoria.* There are ten orphanages in Victoria, with 1580 beds. The total number under care in 1910 was over 2000. Average annual admissions are about 500. This average was, however, not reached in 1910. Deaths numbered eight in 1910. The annual expenditure is about £23,000.

At the end of 1910 there were three industrial and eleven reformatory schools in the State. Of these, one industrial and one reformatory school are wholly controlled by the Government, being used merely as receiving and distributing depôts. The children are sent thence to situations, foster homes or other institutions dealing with State wards. The other schools are under private management, receiving an allowance for State wards. Many of the reformatory children are placed with friends or licensed out. On 31st December, 1910, the wards of the State numbered 6860—comprising 6656 neglected and 204 reformatory children. There were also 39 children free from legal control, who, being incapacitated, were maintained by the State. The total expenditure for 1910 was £89,689, of which £86,160 was borne by the Government.

Under Government control, but not administered as charity, are the training ships "John Murray" and "Dart," on which general instruction is imparted and special training given in technical seamanship.

(iii.) *Queensland.* There are seven orphanages in Queensland with over 1000 beds. The number under care is about 1600, deaths averaging six per annum. The expenditure in 1910 was £27,538.

There are also six industrial and reformatory schools. The total number of children under State control at the end of 1910 was 2960. The gross cost was £34,370, of which £31,368 was borne by the Government.

(iv.) *South Australia.* The State Children's Department exercises a supervision over the probationary and industrial schools, the reformatories, and the Methodist Home. The total number of admissions into these institutions in 1909-10 was 212. The number of inmates on the 30th June, 1910, was 198, in addition to which 1281 were placed out, or had been adopted or apprenticed. There were three deaths of children in industrial schools, and seven of those placed out and in other institutions. The number of children under State control on 30th June, 1910, was 1479. The expenditure for 1909-10 was £21,365 in gross, of which the Government aid was £19,414.

(v.) *Western Australia.* In Western Australia there were, in 1909, eight orphanages (including industrial orphanage schools). The admissions during the year were 173, and the number in institutions on 31st December was 681. There was one death during the year. The State expenditure was about £10,000.

In the Government Industrial School there were, at the end of 1909, 24 inmates, 161 having been admitted during the year. Five deaths occurred. At the end of 1910 751 children were under State control. The net cost to the State was £14,194, parents' contributions amounting to £705.

(vi.) *Tasmania.* There were two admissions to the orphanage in 1910 and thirty-six inmates during the year. No deaths occurred. Expenditure amounted to £422.

There are three industrial schools under benevolent institutions in the State. Admissions in 1910-11 numbered twenty-four, and total inmates during the year 116. No deaths occurred. The expenditure was £1997.

Under the boarding-out system an annual average of 140 children are placed out at an annual average expenditure of £1610. The total number of children under State control at the end of 1910 was 301, the gross cost to the State of children's relief being £3454, of which £296 represents parents' contributions.

vii. *Neglected Children.* The following table summarises the number of neglected children under State Departments. In New South Wales a number of children are boarded out with their own mothers. The inclusion of these would make the total number of children in that State 8680.

#### STATE RELIEF OF NEGLECTED CHILDREN.—TRANSACTIONS OF STATE DEPARTMENTS IN THE COMMONWEALTH, 1910.

Particulars.	N.S.W.*	Vict.	Qld.	S.A.†	W.A.	Tas.	Cwth.
Number of Children under State control at end of year—							
Males ... ..	2,551	3,595	1,460	784	418	195	9,003
Females ... ..	1,947	3,265	1,500	695	333	106	7,846
Total ... ..	4,498	6,860	2,960	1,479	751	301	16,849
	£	£	£	£	£	£	£
Gross cost to State of children's relief	94,064	89,689	34,370	21,365	14,899	3,454	257,841
Receipts, from parents' contributions, etc.	3,712	3,529	3,002	1,951	705	296	13,195
Net cost ... ..	90,352	86,160	31,368	19,414	14,194	3,158	244,646

\* For year ended 5th April following. † For year ended 30th June preceding.

5. *Lepers.*—Lazarets for the treatment of lepers have been established in New South Wales (Little Bay); Queensland (Stradbroke Island, near Brisbane, and Dayman Island, Torres Straits); and the Northern Territory (Mud Island). Quarantine and isolation stations have also been used for the segregation of patients. A great deal of information concerning the beginning and progress of leprosy in Australia has been collected and published by Dr. J. Ashburton Thompson, Chief Government Medical Officer and President of the Board of Health, New South Wales, from whose reports the following table has been compiled:—

#### CASES OF LEPROSY RECORDED IN THE COMMONWEALTH, 1855 to 1910.

State.	1855 to 1905.	1906.	1907.	1908.	1909.	1910.	Total.
New South Wales ... ..	133	7	4	2	2	5	153
Victoria ... ..	*27	—	—	—	—	—	*27
Queensland ... ..	†172	14	21	23	8	6	†244
South Australia ... ..	37	—	1	—	—	—	38
Western Australia ... ..	4	—	—	3	4	3	14
Tasmania ... ..	—	1	—	—	—	—	1
Total ... ..	*†373	22	26	28	14	14	*†477

\* In addition, some Chinese.

† In addition, many Kanakas.

6. **Hospitals for the Insane.**—The method of compiling insanity statistics has been fairly uniform throughout the States, but the various methods of observing the early stages of the development of insanity introduce an element of uncertainty which considerably reduces the value of comparison. In the summary given below, licensed houses (except as regards expenditure) are included for New South Wales throughout, and the number in Victoria is included in 1907, 1908, 1909, and 1910, but the figures are exclusive of reception houses and observation wards in gaols:—

#### HOSPITALS FOR INSANE, COMMONWEALTH, 1906 to 1910.

Particulars.	1906.	1907.*	1908.*	1909.*	1910.*
Number of institutions ... ..	27	30†	30†	31†	31†
Number of beds ... ..	13,507	13,238	14,317	14,546	14,978
Admissions ... ..	2,839	2,583	2,638	2,740	2,936
Total number under treatment ...	16,803	17,000	17,373	17,915	18,870
Discharged as recovered, relieved, &c. ...	1,258	1,216	1,159	1,245	1,309
Deaths ... ..	1,003	1,018	1,071	1,046	1,177
Expenditure ... ..	£404,354	500,168	511,468	514,531	561,677

\* Exclusive of receiving wards at two general hospitals, previously included. † Includes five licensed houses for insane in Victoria.

The proportion of insane, as well as the total number returned as under treatment is gradually rising. In the next table the number of insane under official care in Australia is given, and in the table following the proportion of insane to population.

The number of insane persons in institutions in Australia at the end of each of the last five years was as follows:—

#### INSANE PERSONS IN THE COMMONWEALTH, 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
New South Wales ... ..	5,422	5,509	5,673	5,902	6,148
Victoria ... ..	4,876	4,969	5,014	5,097	5,241
Queensland ... ..	2,029	2,069	2,184	2,227	2,260
South Australia ... ..	994	1,019	1,051	1,051	1,055
Western Australia ... ..	546	630	707	782	793
Tasmania ... ..	482	502	507	506	505
Commonwealth ... ..	14,349	14,698	15,136	15,565	16,002

For the period embraced in the tables Victoria shows the highest rate of insanity, roughly one in 250 persons. It is stated that this is chiefly owing to the proportionately greater number of old persons in that State. On the other hand, in Western Australia, where the population is much younger, a considerably lower insanity rate has prevailed, being about one in 500 in 1906, about one in 400 in 1907 and 1908, and about one in 350 in 1909 and 1910.



## PROPORTION OF INSANE, COMMONWEALTH, 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
PER 1000 OF THE POPULATION.					
New South Wales ...	3.56	3.53	3.58	3.66	3.74
Victoria ...	4.00	4.02	4.01	3.99	4.03
Queensland ...	3.76	3.79	3.92	3.85	3.77
South Australia ...	2.68	2.70	2.70	2.65	2.57
Western Australia ...	2.14	2.48	2.72	2.94	2.87
Tasmania ...	2.60	2.65	2.64	2.62	2.61
Commonwealth ...	3.51	3.53	3.58	3.60	3.62

Consequent upon the development of a more rational attitude to the treatment of mental cases, there is growing up a greater willingness to submit necessary cases to treatment at an earlier stage than formerly. Hence an increase in the number of recorded cases does not necessarily imply an actual increase in insanity. It is important to bear this in mind, because the small progressive increase in the preceding table is probably to be attributed largely, if not solely, to this circumstance. The increase in expenditure is another evidence of the greater care bestowed on the insane.

The leading features in regard to institutions for the care of the insane are given below for 1910:—

HOSPITALS FOR THE INSANE.—NUMBER, STAFFS, AND ACCOMMODATION,  
COMMONWEALTH, 1910.

Particulars.	N.S.W.	Vict.*	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of Institutions—							
Government ...	8	3	3	1	2	1	23
Private ...	2	5†	...	...	1	...	8†
Total ...	10	13	3	1	3	1	31
Medical Staff—							
Males ...	16	20	7	2	3	2	50
Females ...	1	...	...	...	...	2	3
Total ...	17	20	7	2	3	4	53
Nursing Staff & Attendants—							
Males ...	455	434	119	61	73	67	1,209
Females ...	331	424	76	54	32	47	964
Total ...	786	858	195	115	105	114	2,173
Accommodation—							
No. of dormitories ...	†331	1,344	440	†	26	364	†
Capacity in cubic feet ...	†3,413,012	3,454,371	1,263,202	†	512,382	770,407	†
No. of beds ...	5,356	4,855	2,238	1,144	730	655	14,978
Cubic feet to each bed ...	{ †1,000\$	712	565	†	701	1,176	†

\* Exclusive of Receiving House, Royal Park, and of the Receiving Wards at Bendigo and Geelong hospitals. † There are five private licensed houses in Victoria, in which there were 116 cases at end of 1910. Other figures for these private asylums are not available. ‡ Information not available. § Government hospitals only. \$ Ordinary dormitory. \*\* Hospital dormitory.

## HOSPITALS FOR THE INSANE.—PATIENTS TREATED, 1910.

Particulars.	N.S.W.	Vic.*	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
No. of distinct persons treated during year							
Males ... ..	4,456	3,059	1,642	737	715	297	10,906
Females ... ..	3,011	2,870	974	555	274	280	7,964
Total ... ..	7,467	5,929	2,616	1,292	989	577	18,870
Admissions & re-admissions during year—							
Males ... ..	742	422	259	140	138	36	1,737
Females ... ..	479	380	130	101	74	35	1,199
Total ... ..	1,221	802	389	241	212	71	2,936
Discharges—Recovered—							
Males ... ..	256	93	113	...	65	9	536
Females ... ..	212	84	53	1	27	11	388
Total ... ..	468	177	166	1	92	20	924
Relieved and unrelieved—							
Males ... ..	38	48	16	94	8	11	215
Females ... ..	37	60	10	50	5	7	169
Total ... ..	75	108	26	144	13	18	384
Absconders—							
Males ... ..	7	30	...	...	2	3	42
Females ... ..	...	5	...	...	...	...	5
Total ... ..	7	35	...	...	2	3	47
Deaths—							
Males ... ..	275	233	109	51	76	21	765
Females ... ..	150	135	55	41	19	12	412
Total ... ..	425	368	164	92	95	33	1,177
Inmates at end of year—							
Males ... ..	3,676	2,655	1,404	592	567	255	9,149
Females ... ..	2,472	2,586	856	463	226	250	6,853
Total ... ..	6,148	5,241	2,260	1,055	793	505	16,002
Average daily number resident—							
Males ... ..	3,488	2,412	1,400	592	564	255	8,711
Females ... ..	2,263	2,304	854	454	207	246	6,328
Total ... ..	5,751	4,716	2,254	1,046	771	501	15,039

\* Exclusive of inmates of the Receiving House, Royal Park, and of Receiving Wards attached to the hospitals at Bendigo and Geelong, and of five private licensed houses.

In some of the States it is the practice to allow persons well advanced towards recovery to leave the institutions and reside with their relatives or friends, but they are nevertheless under supervision of the asylum authorities and are kept on the books. These patients are not shewn in the above table as inmates. In nearly every case absconders are retaken. They are shewn above as readmitted.

The revenue of Government asylums is small in comparison with their cost, and consists chiefly of patients' fees. The proportion of expenditure borne by the State amounts to about 86 per cent.

### HOSPITALS FOR THE INSANE (GOVERNMENT ONLY), REVENUE AND EXPENDITURE, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Revenue—	£	£	£	£	£	£	£
Fees of patients ...	31,909	24,206	6,537	5,591	2,850	4,121	75,214
Other ...	1,542	...	1,116	15	340	439	3,452
Total ...	33,451	24,206	7,653	5,606	3,190	4,560	78,666
Expenditure—							
Salaries ...	76,945	86,953	26,324	13,469	14,771	8,764	227,226
Maintenance ...	*120,073	82,221	30,213	17,534	14,150	11,953	276,144
Other ...	+13,858	143,533	...	...	453	463	58,307
Total ...	210,876	212,707	56,537	31,003	29,374	21,180	561,677

\* Lunacy patients only. † Including £2446 expenses of Government hospital at Morisset and £1500 expenses of temporary hospital at Stockton. ‡ Buildings and repairs.

(i.) *New South Wales.* The average length of residence in the hospitals of persons who died was 4 years 8 months for males and 5 years 9 months for females; and that of persons who were discharged was 1 year 2 months for males and 1 year 7 months for females.

There are also two State reception houses, where suspected persons are confined for observation, being subsequently either discharged or transferred to lunatic asylums. In two of the gaols observation wards have been instituted, with similar functions.

(ii.) *Victoria.* The average residence in the hospitals of those who died was 8 years 1 month for males, and 7 years 2 months for females; that of those discharged, 1 year 10 months for males, and 1 year 5 months for females.

There are also lunacy wards in two of the general hospitals. On 24th September, 1907, a State receiving house was opened, where persons are placed for observation, and subsequently discharged or transferred to asylums.

(iii.) *Queensland.* The average residence in the institutions of those who died was 8 years 4 months for males and 7 years 5 months for females; and of those who were discharged, 2 years 11 months for males and 1 year 3 months for females.

There are also three reception houses for insane, which act as depôts to which patients are sent with a view to determining whether their mental illness is of a merely temporary character, readily to be relieved, or is of such a nature as to need further treatment at the State asylums.

(iv.) *South Australia.* The average residence of those who died was 8 years 4 months for males and 5 years 3 months for females; of those discharged, 1 year 1 month for males and females.

(v.) *Western Australia.* The period of residence of those who died during the year averaged 2 years 9 months for males and 3 years 6 months for females; of those who were discharged, 1 year 3 months for males and 8 months for females.

(vi.) *Tasmania.* The period of residence of those who died was 4 years 10 months for males and 11 years 3 months for females; that of those discharged, 2 years 2 months for males and 1 year 3 months for females.

(vii.) *Causes of Insanity.* The proportion of causes of insanity to the total of ascertained causes in Australia in 1907, 1908, 1909, and 1910 shows that hereditary influences have been the chief factor, one-fifth of the total ascertained causes coming under this head. Domestic troubles, adverse circumstances, etc., have also been a fruitful source. About one case in eight was due to intemperance in drink.

**PROPORTION OF ASCERTAINED CAUSES, etc., OF INSANITY, COMMONWEALTH,  
1907-10.**

Causes, Previous History, etc.	1907.	1908.	1909.	1910.
	Per cent.	Per cent.	Per cent.	Per cent.
Domestic trouble, adverse circumstances, mental anxiety ... ..	14.7	14.5	11.5	12.0
Intemperance in drink ... ..	13.7	12.9	10.1	14.4
Hereditary influence, ascertained; congenital defect, ascertained ... ..	20.3	18.8	15.0	16.9
Pregnancy, lactation, parturition and puerperal state, uterine and ovarian disorders, puberty, change of life ... ..	8.2	6.8	6.4	5.4
Previous attacks ... ..	11.0	13.5	12.0	12.2
Accident, including sunstroke ... ..	4.3	4.0	3.0	2.1
Old age ... ..	7.7	8.0	9.7	10.8
Other causes ascertained ... ..	20.1	21.5	32.3	26.2
All ascertained causes ... ..	100.0	100.0	100.0	100.0

**7. Treatment of Inebriates.**—The treatment of inebriates is referred to in the section dealing with Public Justice hereinbefore. (See page 917.)

**8. Protection of Aborigines.**—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic in habit of life, and receive food and clothing when they call, whilst others but rarely come under the notice of the boards. The native race is extinct in Tasmania. The average annual expenditure on maintenance, etc., for the last five years was—New South Wales, £14,472; Victoria, £4268; Queensland, £10,380; South Australia, £14,884; Western Australia, £18,810; Commonwealth, £62,814.

**9. Other Charitable Institutions.**—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded ranges from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods for those that exist for the relief of the aged and infirm. The institutions not so particularised include asylums for the deaf, dumb, and blind, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies and nursing systems, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, shipwreck relief societies, bush fires, mining accident relief funds, etc.

**10. State Expenditure on Charities.**—The table below gives the amount expended by Government on charities in each of the last four years. In some of the States amounts have been included for minor items, which in other States are charged to other heads:—

## STATE EXPENDITURE ON CHARITIES, 1907-10.

State.	1907.	1908.	1909.	1910.
	£	£	£	£
New South Wales ... ..	440,360	481,887	519,327	528,289
Victoria ... ..	361,498	383,086	378,165	385,467
Queensland ... ..	206,881	216,144	200,141	205,577
South Australia ... ..	113,345	88,752	88,618	87,112
Western Australia ... ..	146,685	175,839	149,892	139,700
Tasmania ... ..	46,100	47,537	36,316	39,558
Commonwealth ... ..	1,314,869	1,393,245	1,372,459	1,385,703

11. **Total Charitable Expenditure.**—The expenditure in the Commonwealth in money on hospitals, charities, and all forms of relief publicly given, comprising the amounts furnished by Government and those raised by public subscription, etc., but excluding old-age pensions, exceeds £2,200,000.

## SECTION XXV.

## GENERAL GOVERNMENT.

## § 1. Scheme of Parliamentary Government.

1. **General.**—The legislative power of the Commonwealth is vested in the Federal Parliament, which consists of the Sovereign, the Senate, and the House of Representatives. The Sovereign is represented throughout the Commonwealth by the Governor-General, who, subject to the Constitution of the Commonwealth, has such powers and functions as the Sovereign is pleased to assign to him. In each State there is a State Governor, who is the representative of the Sovereign for the State, and who exercises such powers within the State as are conferred upon him by the Letters Patent which constitute his office, and by the instructions, which inform him in detail of the manner in which his duties are to be fulfilled. The Legislature in each State is also bi-cameral, and consists of (a) a Legislative Council and (b) a Legislative Assembly, or House of Assembly, the legislative powers of these chambers being delimited by the Commonwealth and the State Constitutions. The latter chamber, which is the larger, is always elective; the qualification for the franchise varies in character. The former chamber is, in the case of New South Wales and Queensland, nominated by the Governor-in-Council, but in the other States it is also elective, the constituencies being differently arranged and some property qualification for the electorate being required. In the Federal Parliament, however, the qualifications for the franchise are identical for both Houses. A brief account of the constitutional history of each of the States was given in previous issues of this book (see especially Year Book No. 4, pp. 27 to 32).

2. **Number of Members of the Legislatures.**—The following table shews the number of members in each of the legislative chambers in the Commonwealth and in each State in March, 1912:—

MEMBERS OF PARLIAMENTS OF AUSTRALIA, 1912.

Members in—	C'wealth.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Upper House	36	62	34	44	18	30	18	242
Lower House	75	90	65	72	40	50	30	422
Total ...	111	152	99	116	58	80	48	664

The use of the expressions "Upper House" and "Lower House" in the above statement, though not justified constitutionally, is convenient, inasmuch as the legislative chambers are known by different names in the Commonwealth and in some of the States.

In the Commonwealth Parliament the Upper House is known as the Senate, and in the State Parliaments as the Legislative Council. The Lower House is known as follows:—In the Commonwealth Parliament as the House of Representatives, in the State Parliaments of New South Wales, Victoria, Queensland, and Western Australia as the Legislative Assembly, and in the State Parliaments of South Australia and Tasmania as the House of Assembly.

3. **The Cabinet and Executive Government.**—The sections of the Commonwealth Constitution Act dealing with the Executive Government are given on pages 25 and 26 hereinafore. In both the Commonwealth and the State Legislatures the forms of Government have been founded on their prototype, the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth and in the State Governments are vested in the Governor-in-Council. The Executive Council in the Commonwealth and in the majority of the States is co-extensive with a group of departmental chiefs who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In Victoria and Tasmania, however, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(i.) *The Executive Council.* This body is composed of the Governor and the Ministers of State holding office for the time being. The latter are sworn both as Executive Councillors and as Ministers controlling the different administrative departments. It should be observed that all persons living who have held Ministerial office under former Governments are also technically members of the Executive Council, and are thus liable to be specially summoned for attendance at meetings of that body. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of its proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

The official members of the Executive Council in March, 1912, are specified below. In addition all living members of past Ministries (see following pages) are technically liable to be officially summoned to attend meetings of the Executive Council:—

#### OFFICIAL MEMBERS OF THE COMMONWEALTH EXECUTIVE COUNCIL, 1912.

<i>Prime Minister and Treasurer</i>	...	The Right Hon. ANDREW FISHER, P.C.
<i>Attorney-General</i>	... ..	The Hon. W. M. HUGHES.
<i>Minister of State for External Affairs</i>	...	The Hon. J. THOMAS.
<i>Minister of State for Home Affairs</i>	...	The Hon. K. O'MALLEY.
<i>Postmaster-General</i>	... ..	The Hon. C. E. FRAZER.
<i>Minister of State for Defence</i>	...	The Hon. G. F. PEARCE.
<i>Minister of State for Trade and Customs</i>	...	The Hon. F. G. TUDOR.
<i>Vice-President of Executive Council</i>	...	The Hon. G. MCGREGOR.
<i>Honorary Minister</i>	... ..	The Hon. E. FINDLEY.
"	"	"
"	"	"
"	"	The Hon. E. A. ROBERTS.

Particulars of previous Commonwealth Ministries are given on pages 37-9 hereinbefore, and on pages 946 and 947 following.

(ii.) *The Cabinet.* The meetings of this body are private and deliberative. No one is admitted but the actual Ministry of the day, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet, being the leaders of the party in power in Parliament, control the bent of legislation and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally he is in no way bound to do so. The following statement gives the names of the Ministries of State for the Commonwealth, who have held office since the inauguration of the Commonwealth Government:—

# **MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM 1st JANUARY, 1901, to MARCH, 1912.**

EXTERNAL AFFAIRS.			TRADE AND CUSTOMS.		
Name.	From	To	Name.	From	To
§ Rt. Hon. E. BARTON, P.C., K.C.*	1/1/01	23/9/03	Rt. Hon. C. C. KINGSTON, P.C., K.C.	1/1/01	24/7/03
Hon. A. DEAKIN*	24/9/03	26/4/04	Hon. Sir W. J. LYNE, K.C.M.G.	7/8/03	26/4/04
Hon. W. M. HUGHES	27/4/04	17/8/04	Hon. A. FISHER	27/4/04	17/8/04
Rt. Hon. G. H. REID, P.C., K.C.**	18/8/04	4/7/05	Hon. A. McLEAN	18/8/04	4/7/05
Hon. A. DEAKIN*	5/7/05	12/11/08	Hon. Sir W. J. LYNE, K.C.M.G.	5/7/05	29/7/07
Hon. E. L. BATCHELOR	13/11/08	2/6/09	Hon. A. CHAPMAN	30/7/07	12/11/08
Hon. L. E. GROOM	3/6/09	28/4/10	Hon. F. G. TUDOR	13/11/08	2/6/09
Hon. E. L. BATCHELOR††	29/4/10	8/10/11	Hon. Sir R. W. BEST, K.C.M.G.	3/6/09	28/4/10
Hon. J. THOMAS	14/10/11		Hon. F. G. TUDOR	29/4/10	
ATTORNEY GENERAL.			TREASURER.		
Name.	From	To	Name.	From	To
Hon. A. DEAKIN	1/1/01	23/9/03	Rt. Hon. Sir G. TURNER, P.C., K.C.M.G.	1/1/01	26/4/04
Hon. J. G. DRAKE	24/9/03	26/4/04	Hon. J. C. WATSON*	27/4/04	17/8/04
Hon. H. B. HIGGINS, K.C.	27/4/04	17/8/04	Rt. Hon. Sir G. TURNER, P.C., K.C.M.G.	18/8/04	4/7/05
Hon. Sir J. H. SYMON, K.C.M.G., K.C.	18/8/04	4/7/05	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	5/7/05	29/7/07
Hon. I. A. ISAACS	5/7/05	11/10/06	Hon. Sir W. J. LYNE, K.C.M.G.	30/7/07	12/11/08
Hon. L. E. GROOM	13/10/06	12/11/08	Hon. A. FISHER*	13/11/08	2/6/09
Hon. W. M. HUGHES	13/11/08	2/6/09	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	3/6/09	28/4/10
Hon. F. M. GLYNN	3/6/09	28/4/10	Rt. Hon. A. FISHER, P.C.*	29/4/10	
Hon. W. M. HUGHES	29/4/10				
HOME AFFAIRS			DEFENCE.		
Name.	From	To	Name.	From	To
Hon. Sir W. J. LYNE, K.C.M.G.	1/1/01	7/8/03	Hon. Sir J. R. DICKSON, K.C.M.G.	1/1/01	
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	7/8/03	26/4/04	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	17/1/01	7/8/03
Hon. E. L. BATCHELOR	27/4/04	17/8/04	Hon. J. G. DRAKE	7/8/03	23/9/03
Hon. D. THOMPSON	18/8/04	4/7/05	Hon. A. CHAPMAN	24/9/03	26/4/04
Hon. L. E. GROOM	5/7/05	11/10/06	Hon. A. DAWSON	27/4/04	17/8/04
† Hon. T. T. EWING	12/10/06	23/1/07	Hon. J. W. McCAY	18/8/04	4/7/05
Hon. J. H. KEATING	24/1/07	12/11/08	Hon. T. PLAYFORD	5/7/05	23/1/07
Hon. H. MAHON	13/11/08	2/6/09	Hon. Sir T. T. EWING, K.C.M.G.	24/1/07	12/11/08
Hon. G. W. FULLER	3/6/09	28/4/10	Hon. G. F. PEARCE	13/11/08	2/6/09
Hon. K. O'MALLEY	29/4/10		Hon. J. COOK	3/6/09	28/4/10
			Hon. G. F. PEARCE	29/4/10	
POSTMASTER-GENERAL.			VICE-PRESIDENT OF THE EXECUTIVE COUNCIL.		
Name.	From	To	Name.	From	To
Rt. Hon. Sir JOHN FORREST, P.C., G.C.M.G.	1/1/01	17/1/01	Hon. R. E. O'CONNOR, K.C.	1/1/01	23/9/03
Hon. J. G. DRAKE	5/2/01	7/8/03	Hon. T. PLAYFORD	24/9/03	26/4/04
Hon. Sir P. O. Fysh, K.C.M.G.	7/8/03	26/4/04	Hon. G. MCGREGOR	27/4/04	17/8/04
Hon. H. MAHON	27/4/04	17/8/04	Hon. J. G. DRAKE	18/8/04	4/7/05
Hon. S. SMITH	18/8/04	4/7/05	† Hon. T. T. EWING	5/7/05	11/10/06
Hon. A. CHAPMAN	5/7/05	29/7/07	Hon. J. H. KEATING	12/10/06	19/2/07
Hon. S. MAUGER	30/7/07	12/11/08	Hon. Sir R. W. BEST, K.C.M.G.	20/2/07	12/11/08
Hon. J. THOMAS	13/11/08	2/6/09	Hon. G. MCGREGOR	13/11/08	2/6/09
Hon. Sir J. QUICK	3/6/09	28/4/10	Hon. E. D. MILLEN	3/6/09	28/4/10
Hon. J. THOMAS	29/4/10	14/10/11	Hon. G. MCGREGOR	29/4/10	
Hon. C. E. FRAZER	14/10/11				

\* Prime Minister. § Afterwards the Right Hon. Sir E. Barton, P.C., G.C.M.G., etc. † Afterwards the Hon. Sir T. T. Ewing, K.C.M.G. ‡ Afterwards the Hon. Sir N. E. Lewis, K.C.M.G. || Still in office. ¶ Died 10th January, 1901. \*\* Prime Minister, afterwards the Right Hon. Sir G. H. Reid, P.C., K.C.M.G., etc. †† Died 8th October, 1911.



MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM  
1st JANUARY, 1901, TO MARCH, 1912—(Continued).

## WITHOUT PORTFOLIO.

Name.	From	To	Name.	From	To
Hon. N. E. LEWIS ...	1/1/01	23/4/01	Hon. J. HUTCHISON ...	13/11/08	2/6/09
Hon. Sir P. O. FYSH, K.C.M.G. ...	24/4/01	7/8/03	Hon. A. DEAKIN* ...	3/6/09	28/4/10
Hon. J. H. KEATING ...	5/7/05	11/10/06	Col. Hon. J. F. G. FOXTON ...	3/6/09	28/4/10
Hon. S. MAUGER ...	12/10/06	29/7/07	Hon. E. FINDLEY ...	29/4/10	
Hon. J. H. COOK ...	28/1/08	12/11/08	Hon. C. E. FRAZER ...	29/4/10	14/10/11
			Hon. E. A. ROBERTS ...	23/10/11	

See notes on previous page.

(iii.) *Constitution of Ministries.* The subjoined table shews the constitution of the Ministries in the Commonwealth and the State Governments in March, 1912:—

## CONSTITUTION OF MINISTRIES, 1912.

Ministers with Seats in—	C'wealth.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
The Upper House ...	3	2	4	2	1	2	2	16
The Lower House ...	7	8	8	7	5	6	3	44
Total ...	10	10	12	9	6	8	5	60

The names of the members of the Ministries in each State in May, 1912, are shewn in the following statement:—

## MEMBERS OF STATE GOVERNMENT MINISTRIES, 1912.

## NEW SOUTH WALES—MINISTRY.

*Premier and Colonial Secretary—*

HON. J. S. T. MCGOWEN.

*Colonial Treasurer—*

HON. J. H. CANN.

*Attorney-General—*

HON. W. A. HOLMAN.

*Minister of Justice—*

HON. D. R. HALL, M.L.C.

*Secretary for Lands and Minister for  
Labour and Industry—*

HON. G. S. BEEBY.

*Secretary for Public Works—*

HON. A. GRIFFITH.

*Minister for Agriculture—*

HON. J. L. TREFLE.

*Secretary for Mines—*

HON. A. EDDEN.

*Vice-President of the Executive Council—*

HON. F. FLOWERS, M.L.C.

*Minister for Public Instruction—*

HON. C. CARMICHAEL.

## VICTORIA—MINISTRY.

*Premier and Treasurer—*

HON. W. A. WATT.

*Chief Secretary and Minister for Labour—*

HON. J. MURRAY.

*Minister for Water Supply and Agriculture—*

HON. G. GRAHAM.

*Minister for Lands—*

HON. H. MACKENZIE.

*Minister for Railways, Mines, and Forests—*

HON. P. MCBRIDE.

*Minister of Education—*

HON. A. A. BILLSON.

*Attorney-General and Solicitor-General—*

HON. J. D. BROWN, M.L.C.

*Minister of Public Works and Public  
Health—*

HON. W. H. EDGAR, M.L.C.

*Ministers without Office—*

HON. J. THOMSON.

HON. J. CAMERON.

HON. W. BAILLIEU, M.L.C.

HON. F. HAGELTHORN, M.L.C.

## QUEENSLAND—MINISTRY.

<i>Premier, Vice-Pres. of Ex. Council, and Chief Sec.—</i> HON. D. F. DENHAM.	<i>Secretary for Railways—</i> HON. W. T. PAGET.
<i>Home Secretary and Secretary for Mines—</i> HON. J. G. APPEL.	<i>Secretary for Public Instruction—</i> HON. K. M. GRANT.
<i>Secretary for Public Lands—</i> HON. E. H. MACARTNEY.	<i>Attorney-General—</i> HON. T. O'SULLIVAN, M.L.C.
<i>Treasurer and Secretary for Public Works—</i> HON. W. H. BARNES.	<i>Secretary for Agriculture and Stock—</i> HON. J. TOLMIE.
	<i>Minister without Portfolio—</i> HON. A. H. BARLOW, M.L.C.

## SOUTH AUSTRALIA—MINISTRY.

<i>Premier, Treasurer and Minister for Education—</i> HON. A. H. PEAKE.	<i>Attorney-General and Minister of Industry—</i> HON. H. HOMBURG.
<i>Chief Secretary—</i> HON. J. G. BICE.	<i>Commissioner of Crown Lands and Immigration—</i> HON. F. W. YOUNG.
<i>Commissioner of Public Works and Minister of Mines and Marine—</i> HON. R. BUTLER.	<i>Minister for Agriculture—</i> HON. T. PASCOE, M.L.C.

## WESTERN AUSTRALIA—MINISTRY.

<i>Premier and Colonial Treasurer—</i> HON. J. SCADDAN.	
<i>Minister for Lands and Agriculture—</i> HON. T. H. BATH.	<i>Minister for Works—</i> HON. W. D. JOHNSON.
<i>Minister for Mines and Railways—</i> HON. P. COLLIER.	<i>Colonial Secretary—</i> HON. J. M. DREW, M.L.C.
<i>Attorney-General and Min. for Education—</i> HON. T. WALKER.	<i>Ministers without Portfolio—</i> HON. J. C. DODD, M.L.C. HON. W. C. ANGWIN.

## TASMANIA—MINISTRY.

<i>Premier and Treasurer—</i> HON. SIR N. E. LEWIS, K.C.M.G.	
<i>Chief Secretary—</i> HON. G. H. BUTLER, M.L.C.	<i>Minister of Lands and Public Works—</i> HON. A. HEAN.
<i>Attorney-General—</i> HON. A. E. SOLOMON.	<i>Minister without Portfolio—</i> HON. C. RUSSEN, M.L.C.

4. **The Appointment of Ministers and of Executive Councillors.**<sup>1</sup>—Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the

1. See Jenks' "Government of Victoria," pp. 269 *et seq.*

Imperial Parliament. The members of the Ministry tender their resignations to the Governor-General or Governor, whose duty it is to announce his intention of accepting them. The resignations are not actually accepted at once, for in that case the offices would become vacant and business would be at a standstill. The outgoing Premier usually suggests to the Governor the name of the most prominent member of the Opposition, and the Governor thereupon "sends for" the person suggested; and if the latter accepts the responsibility, he endeavours to form a Ministry; if he fails, he informs the Governor, who applies to some other person. The distribution of portfolios is first arranged by the proposed Ministers themselves and is then submitted to the Governor for approval, which is given as a matter of course unless the list contains the name of any person against whom serious objections exist. Before appointing the persons named to the various offices the Governor accepts the resignations of the outgoing Ministers, and also appoints to seats in the Executive Council such members of the new Ministry as do not already hold them. Their seats in Parliament being ordinarily vacated by acceptance of office the new Ministers must go before their constituencies, and the result of these by-elections usually decides the attitude of the Opposition. In the Commonwealth Parliament, however, seats are not vacated by the acceptance of office. It may be seen from what has been stated above that only certain persons can in practice be chosen as members of a Ministry. The Cabinet must be chosen so that the following conditions are fulfilled:—(a) The members must belong to one or other of the Legislative Chambers and also to the same political party; (b) that party must possess a majority in the House of Representatives or in the Legislative Assembly or House of Assembly as the case may be; (c) the Ministers must carry out a concerted policy; (d) they must acknowledge the leadership of one chief Minister; and (e) must be under a joint responsibility, signified by resignation *en bloc* in the event of Parliamentary censure.

**5. The Resignation of Ministers.**—A Ministry is bound to resign either when it fails to command a majority in the House of Representatives, the Legislative Assembly, or the House of Assembly, as the case may be, or when a want of confidence has been clearly shewn, either (a) by a vote of censure, (b) by a declaration of want of confidence, or (c) by a vote disapproving of some act of the Government. In such cases the Ministry must either resign or must appeal to the country.

**6. Enactments of the Parliament.**—In the Commonwealth, all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act (see pp. 22-3 hereinbefore). In the States, laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council and Legislative Assembly or House of Assembly. The Governor-General or the State Governor acts as Viceroy as regards giving the Royal Assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States, the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

**7. Powers and Functions of the Governor-General and of the Governors.**—The Governor-General and the State Governors act under the authority of the commissions by which they are appointed and of Letters Patent under the Great Seal of the United Kingdom, and according to instructions issued by the Colonial Office and passed under the Royal Sign Manual and Signet.

(i.) *The Governor-General.* The office of Governor-General and Commander-in-Chief of the Commonwealth was constituted by Letters Patent issued on the 29th October, 1900, in pursuance of the provisions of the Commonwealth Constitution Act. The powers and duties of the Governor-General were further defined by Royal instructions passed on

the same date. The principal and most important of his functions, legislative as well as executive, are expressly conferred upon him by the terms of the Constitution itself. He is the custodian of the Great Seal of the Commonwealth, and has the appointment of political officers to administer Departments of State of the Commonwealth.

- (a) His legislative functions are exercised with respect to proposed laws as finally passed by the Federal Houses of Parliament. Such Bills are presented to the Governor-General for his assent in the King's name, on receiving which they become law throughout the Commonwealth. The Governor-General may, however, withhold his assent, or may reserve any Bill for the King's pleasure. He may return to the House in which it originated any proposed law with suggested amendments. The King may disallow any law within one year from the date on which it was assented to by the Governor-General.
- (b) The Governor-General's executive functions are, under ordinary circumstances, exercised on the advice of his responsible Ministers. Various specific powers are vested in him by the Constitution; he may summon or prorogue Parliament and may dissolve the House of Representatives. He is the Commander-in-Chief of the military and naval forces of the Commonwealth, and is invested by the Crown with the prerogative of mercy in case of offences committed against the laws of the Commonwealth.
- (c) The Governor-General is also invested with authority in certain matters of Imperial interest, such as the control of the naval and military forces of the Commonwealth; the observance of the relations of foreign States to Great Britain, so far as they may be affected by the indirect relations of such States to the Commonwealth; and the treatment of neutral and belligerent ships in Commonwealth waters in time of war.

The Governor-General may not leave the Commonwealth without having first obtained leave from the Imperial Government, to whom alone he is responsible for his official acts. The present Governor-General is the Right Honourable Thomas, Baron Denman, P.C., G.C.M.G., K.C.V.O. He assumed office on the 31st July, 1911. Particulars of previous Governors-General are given on p. 37 hereinbefore.)

(ii.) *The State Governors.* The powers and functions of the State Governors are, within their respective States, very similar to those exercised by the Governor-General for the Commonwealth, and are defined by the terms of their Commissions and by the Royal instructions accompanying the same. A State Governor is the official head of the State Legislature, and assents in the name of the Crown to all Bills passed by the Parliament, reserving for the Royal Assent certain classes of Bills, which are regulated by the Constitution Acts and by the instructions issued by the Imperial Government. The Governors are, under ordinary circumstances, guided by their Executive Councils, the chief matters in which the exercise of discretion is required being the granting or withholding of a dissolution of Parliament when requested by a Premier; the appointment of a new Ministry; or the assenting to, vetoing, or receiving of Bills passed by the legislative chambers. The Governors are authorised, under certain restrictions, to administer the prerogative of mercy by the reprieve or pardon of criminal offenders within their jurisdiction, and to remit fines and penalties due to the Crown. All moneys to be expended for the public service are issued from the Treasury under the Governor's warrant.

The following is a list of the Governors of the various States of the Commonwealth in March, 1912:—

<i>New South Wales</i> ...	BARON CHELMSFORD, K.C.M.G.
<i>Victoria</i> ...	SIR JOHN MICHAEL FLEETWOOD FULLER, Bart., K.C.M.G.
<i>Queensland</i> ...	SIR WILLIAM MACGREGOR, G.C.M.G., C.B.
<i>South Australia</i> ...	ADMIRAL SIR DAY HORT BOSANQUET, K.C.B.
<i>Western Australia</i> ...	SIR GERALD STRICKLAND, K.C.M.G.
<i>Tasmania</i> ...	Major-General SIR HARRY BARRON, K.C.M.G., C.V.O.

8. **Cost of Parliamentary Government.**—The following statement shews the cost of parliamentary government in the Commonwealth and in each State, as well as in the whole of Australia, for the year ended the 30th June, 1911 :—

**COST OF PARLIAMENTARY GOVERNMENT, 1910-11.**

Particulars.	C'with.	N. S. W.	Vict.	Q'ld.	S. A.	W. A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. <i>Governor-General or Governor</i> —								
Governor's salary ...	10,000	5,000	5,000	3,000	5,000	4,000	2,750	34,750
Private secretary's salary ...	...	350	...	300	...	350	...	1,000
Governor's establishments ...	...	350	...	...	...	1,023	216	...
Repairs and maintenance of Governor's residences ...	6,876	8,183	3,428	4,477	2,311	1,647	421	33,514
Miscellaneous ...	4,036	173	...	...	247	...	126	...
Total ...	20,912	14,056	8,428	7,777	7,558	7,020	3,513	69,264
2. <i>Executive Council</i> —								
Salaries of officers ...	553	279	467	220	...	350	...	1,869
Other expenses ...	184	25	26	75	...	31	...	341
Total ...	737	304	493	295	...	381	...	2,210
3. <i>Ministry</i> —								
Salary of Ministers ...	12,000	11,040	8,400	7,699	5,000	6,200	3,200	53,539
Other expenses ...	...	1,445	...	...	...	933	193	2,571
Total ...	12,000	12,485	8,400	7,699	5,000	7,133	3,393	56,110
4. <i>Parliament</i> —								
A. <i>The Upper House</i> :—								
Allowances to members ...	21,519	...	...	...	3,200	6,917	1,875	33,511
Railway passes ...	9,153*	5,810	1,020	11	720	266	750	17,719
Other expenses of members ...	276	...	...	...	103	...	2	381
B. <i>The Lower House</i> :—								
Allowances to members ...	43,205	22,423	17,045	19,635	7,200	11,571	3,103	124,182
Railway passes ...	†	10,860	1,950	11	1,600	396	1,250	16,056
Other expenses of members ...	796	...	...	1,552	301	89	20	2,758
C. <i>Miscellaneous</i> :—								
Salaries of officers and staff ...	14,421	24,309	13,175	6,983	5,012	5,413	2,515	71,891
Printing ...	8,536	6,017	3,660	2,491	4,822	435	1,587	27,538
Hansard ...	14,655	...	7,008	5,756	2,605	3,732	...	...
Library ...	4,000	...	1,504	476	569	350	120	...
Refreshment rooms ...	990	...	1,300	929	878	1,030	76	...
Water, power, light and heat ...	1,357	7915	771	469	775	...	...	66,883
Postage and stationery ...	5,044	...	1,033	269	165	2,094	284	...
Miscellaneous ...	...	...	...	61	628	...	...	...
Total ...	123,982	77,334	48,466	38,631	28,578	32,283	11,585	360,859
5. <i>Electoral Office</i> —								
Salaries of officers and staff ...	4,339	788	787	1,162	1,531	1,694	146	83,535
Other expenses ...	18,386	16,619	129,878	4,523	343	3,339	...	...
Total ...	22,725	17,407	30,665	5,685	1,874	5,033	146	83,535
6. <i>Cost of Elections</i> ...	52,851§	18,663	740	1,514	...	117	499	74,384
7. <i>Royal Commissions and Select Committees</i> —								
Fees of members ...	287	2,627	1,200	2,233	29	1,917	68	14,522
Other expenses of members ...	601	...	770	...	1,477	...	...	...
Miscellaneous ...	566	1,165	819	...	485	...	278	...
Total ...	1,454	3,792	2,789	2,233	1,991	1,917	346	14,522
GRAND TOTAL ...	234,661	144,041	99,981	63,834	45,001	53,884	19,482	660,884

\* Including Lower House. † Included in Upper House. ‡ Includes the cost of printing a new special roll, in consequence of an alteration in the franchise. § Including Referenda.  
 || Not available. Each member of both Houses has a pass for the whole of the State Railways.  
 ¶ Members are allowed £1 a day when travelling.

9. **Cost of Parliamentary Government per 1000 of Population.**—In the subjoined table particulars are given for some of the most important items of the cost of parliamentary government per 1000 of population for the year ended 30th June, 1911 :—

**COST\* OF PARLIAMENTARY GOVERNMENT PER 1000 OF POPULATION, 1910-11.**

Particulars.	C'wlth.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. <i>Governor-General or Governor</i> —								
Salary... ..	2.26	3.04	3.84	5.01	12.19	14.45	14.19	7.85
All other expenses ... ..	2.47	5.51	2.63	7.97	6.24	10.91	3.94	7.80
Total ... ..	4.73	8.55	6.47	12.98	18.43	25.36	18.13	15.65
2. <i>Executive Council</i> ... ..	0.17	0.19	0.38	0.49	...	1.37	...	0.50
3. <i>Ministry</i> ... ..	2.71	7.59	6.46	12.86	12.19	25.77	17.51	12.68
4. <i>Parliament</i> —								
A. <i>The Upper House:</i>								
Allowances and other ex-	4.92	...	...	...	8.05	24.99	9.69	7.65
penses of members ... ..	2.07	3.53	0.78	...	1.75	0.96	3.87	4.04
Railway passes ... ..								
B. <i>The Lower House:</i>								
Allowances and other ex-	9.94	13.64	13.10	35.38	18.28	42.12	16.11	28.68
penses of members ... ..	†	6.60	1.50	...	3.90	1.43	6.45	3.63
Railway passes ... ..								
C. <i>Miscellaneous:</i>								
Salaries of officers and staff	3.26	14.78	10.12	11.66	12.22	19.55	12.99	16.23
Printing and <i>Hansard</i> ...	5.25	...	8.20	13.78	18.12	15.02	8.19	...
Library ... ..	0.91	8.49	1.16	0.79	1.39	1.26	0.62	...
All other expenditure ...	1.67	...	2.38	2.88	5.96	11.29	1.86	...
Total Parliament ... ..	28.02	47.04	37.24	64.49	69.67	116.62	59.78	81.56
5. <i>Electoral Office</i> ... ..	5.14	10.59	23.57	9.49	4.57	18.18	0.75	18.87
6. <i>Cost of Elections</i> ... ..	11.93	11.35	0.57	2.53	...	0.42	2.57	16.81
7. <i>Royal Commissions and Select Committees</i> ... ..	0.33	2.31	2.14	3.72	4.85	6.92	1.79	3.28
GRAND TOTAL ... ..	53.03	87.62	76.83	106.56	109.71	194.64	100.53	149.35

\* Cost expressed in pounds sterling and decimals of a pound, per 1000 of population. † Including Lower House. ‡ Included in Upper House.

## § 2. Parliaments and Elections.

1. **Qualifications for Membership and for Franchise.**—The summary on pages 956-7 gives particulars as to the legislative chambers in the Commonwealth and State Parliaments, and shews concisely the qualifications necessary for membership and for the franchise in each House. Persons who are otherwise eligible, either as members or voters, are generally disqualified on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on the grounds of holding a place of profit under the Crown, being pecuniarily interested in Government contracts, or being an undischarged bankrupt.

**2. The Federal Parliament.**—The Senate consists of thirty-six members, six being returned by each of the original federating States. Members of this chamber are elected for a term of six years, but by a provision in the Constitution a certain number retire at the end of every third year, although they are eligible for re-election. In accordance with the Constitution the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows:—New South Wales, 27; Victoria, 21; Queensland, 10; South Australia, 7; Western Australia, 5; Tasmania, 5—total, 75. The Constitution provides for a minimum of five members in each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators each State is counted as a single electorate, but an elaborate scheme of subdivision had to be undertaken in order to provide workable electorates in each State for members of the House of Representatives. Members of both Houses are paid at the rate of £600 per annum. Further information regarding the Senate and the House of Representatives is given on pages 15 to 22 hereinbefore.

(i.) *Particulars of Elections.* There have been three complete Parliaments since the inauguration of Federation. The first Parliament was opened by His Royal Highness, the Duke of Cornwall and York on 9th May, 1901, and was dissolved on 23rd November, 1903. The second session of the fourth Parliament was opened on 5th September, 1911, and was prorogued on 22nd December of the same year. Further information as to the Commonwealth Parliaments since their inception is given on page 946 hereinbefore. Since the establishment of the Commonwealth there have been four elections for the Senate and for the House of Representatives. The fourth Federal elections took place on 13th April, 1910, when, in addition to the ordinary voting, electors were called upon to decide the questions on the Financial Agreement and the taking over of the State Debts by the Commonwealth. These matters are referred to in detail on pages 790 and 791 hereinbefore. Particulars regarding the number of electors enrolled and the number of electors to whom ballot-papers were issued at the last three elections may be found in the tables given hereunder:—

**FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906,  
AND 13th APRIL, 1910.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.			
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males	Fem.	Total.	
THE SENATE.										
New South Wales	1903	360,285	326,764	687,049	189,877	134,487	324,364	52.70	41.16	47.21
	1906	392,077	345,522	737,599	229,654	151,682	381,336	58.57	43.90	51.70
	1910	444,269	390,393	834,662	301,167	211,635	512,802	67.79	54.21	61.44
Victoria ...	1903	302,069	310,403	612,472	171,839	141,648	313,487	56.89	45.63	51.18
	1906	335,886	336,168	672,054	209,252	171,933	381,185	62.30	51.14	56.72
	1910	346,050	357,649	703,699	245,666	222,869	468,535	70.99	62.32	66.58
Queensland ...	1903	127,914	99,166	227,080	79,938	44,569	124,507	62.49	44.94	54.83
	1906	150,037	121,072	271,109	79,567	44,972	124,539	53.03	37.14	45.94
	1910	158,436	120,595	279,031	104,570	66,064	170,634	66.00	54.78	61.15
South Australia ...	1903	85,947	81,828	167,775	35,736	19,049	54,785	41.58	23.28	32.65
	1906	97,454	95,664	193,118	43,318	27,199	70,517	44.45	28.43	36.51
	1910	105,301	102,354	207,655	63,384	47,119	110,503	60.19	46.03	53.22
Western Australia	1903	74,754	42,188	116,942	26,873	6,270	33,148	35.96	14.86	28.35
	1906	91,427	54,046	145,473	37,180	15,532	52,712	40.67	28.74	36.23
	1910	80,996	53,953	134,979	53,704	30,189	83,893	66.30	55.92	62.15
Tasmania	1903	43,515	38,753	82,268	23,729	13,292	37,021	54.53	34.30	45.00
	1906	47,306	42,903	90,209	29,164	19,715	48,879	61.65	45.95	54.18
	1910	51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
Commonwealth	1903	994,484	899,102	1,893,586	527,997	359,315	887,312	53.09	39.96	46.86
	1906	1,114,187	995,375	2,109,562	628,135	431,033	1,059,168	56.38	43.30	50.21
	1910	1,186,783	1,071,699	2,258,482	802,030	601,946	1,403,976	67.58	56.17	62.16

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906,  
AND 13th APRIL, 1910—(Continued).

State.	Electors Enrolled.*			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.			
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.	
THE HOUSE OF REPRESENTATIVES.*										
New South Wales	1903	303,254	274,763	578,017	164,133	118,381	282,514	54.12	43.08	48.88
	1906	363,723	314,777	678,500	216,150	141,227	357,377	59.43	44.87	52.67
	1910	431,702	379,927	811,629	294,049	207,868	501,917	68.11	54.71	61.84
Victoria ...	1903	241,134	247,089	488,223	142,460	120,329	262,789	59.08	48.70	53.83
	1906	335,886	336,168	672,054	209,266	171,999	381,265	62.30	51.16	56.73
	1910	346,050	357,649	703,699	245,663	222,869	468,532	70.99	62.32	66.58
Queensland	1903	114,550	88,375	202,925	74,042	41,689	115,731	64.64	47.17	57.03
	1906	150,037	121,072	271,109	79,540	44,942	124,482	53.01	37.12	45.92
	1910	158,436	120,595	279,031	104,570	66,064	170,634	66.00	54.78	61.15
South Australia ...	1903	23,856	25,789	49,645	12,394	7,728	20,122	51.95	29.97	40.53
	1906	42,065	38,578	80,643	19,850	12,669	32,519	47.19	32.84	40.32
	1910	59,581	61,594	121,175	37,189	29,852	67,041	62.42	48.47	55.33
Western Australia	1903	41,500	28,324	69,824	16,824	4,409	21,233	40.54	15.57	30.41
	1906	91,427	54,046	145,473	36,976	15,740	52,716	40.44	29.12	36.24
	1910	80,996	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.15
Tasmania	1903	43,515	38,753	82,268	23,729	13,284	37,013	54.53	34.28	44.99
	1906	37,779	34,839	72,618	23,753	16,441	40,194	62.87	47.19	55.35
	1910	51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
Commonwealth	1903	767,809	703,093	1,470,902	433,582	305,820	739,402	56.47	43.50	50.27
	1906	1,020,917	899,480	1,920,397	585,535	403,018	988,553	57.35	44.81	51.48
	1910	1,128,496	1,020,473	2,148,969	768,714	580,912	1,349,626	68.12	56.93	62.80

\* For the House of Representatives the number of electors enrolled in contested divisions only is given.

In the Senate the figures for the year 1906 shew that ballot-papers were issued to 50.21 per cent. of the electors, and are a slight improvement on those for the year 1903, when only about 47 per cent. of the electors visited the polls. There was, however, a substantial increase in the number of electors who voted at the 1910 elections, 62.16 per cent. of the persons on the rolls exercising the franchise. The increase of 11.95 per cent. over the 1906 elections was in a great measure due to the extraordinary amount of party feeling that existed at the 1910 elections. Allowing for the various causes which may have prevented those qualified from recording their votes, it cannot be said that the electors of the Commonwealth have, so far, set a high value on the privilege of the franchise. In the elections for the House of Representatives the figures for the three years shew a slight improvement in percentage of voters as compared with the returns for the Senate; nevertheless they cannot be looked upon as satisfactory. In every instance the percentage of female voters is very far below that of the males.

3. **Commonwealth Referenda, 26th April, 1911.**—Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (A) The Constitution Alteration (Legislative Powers) 1910, and (B) the Constitution Alteration (Monopolies) 1910. If, in a majority of the States, a majority of the electors voting approve the proposed laws, and if a majority of all the electors voting also approve them, they are presented to the Governor-General for the King's assent. Particulars of the alterations proposed have already been given (see page 22).

Results of the Referenda on the above proposals are given in the following table, which shews the number of electors enrolled, electors to whom ballot papers were issued, and the number of votes in favour of, and against, each of the proposed laws, and as will be seen neither of the proposed laws was approved by the people.



COMMONWEALTH REFERENDA (LEGISLATIVE POWERS AND MONOPOLIES),  
TAKEN ON 26th APRIL, 1911.

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Legislative Powers.		Monopolies.	
							Total Number of Votes given in favour of the Prop's'd Law.	Total Number of Votes given not in favour of the Prop's'd Law.	Total Number of Votes given in favour of the Prop's'd Law.	Total Number of Votes given not in favour of the Prop's'd Law.
N.S.W. ...	461,196	406,998	868,194	233,668	150,520	384,188	135,968	240,605	138,237	238,177
Victoria ...	355,381	367,996	723,377	236,194	212,372	448,566	170,288	270,390	171,453	268,743
Q'land ...	167,725	125,278	293,003	101,245	60,890	162,135	69,552	89,420	70,259	88,472
S.Aust. ...	110,217	105,810	216,027	72,761	61,041	133,802	50,358	81,904	50,835	81,479
W.Aust. ...	83,850	54,847	138,697	42,538	18,884	61,482	33,043	27,185	33,592	26,561
Tas. ...	54,008	48,318	102,326	33,103	24,950	58,053	24,147	33,200	24,292	32,960
Totals for C'wealth	1,232,377	1,109,247	2,341,624	719,569	526,657	1,246,226	483,356	742,704	488,668	736,392

4. **The Parliament of New South Wales.**—The Legislative Council is in this State a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, but in practice the number is restricted to about sixty, the members at the latest available date being sixty-two. The tenure of the seat is for life; four-fifths of the members must be persons not holding any paid office under the Crown, but this is not held to include officers of His Majesty's sea or land forces on full or half pay, or retired officers on pensions. The Legislative Assembly consists of ninety members, who hold their seats during the existence of the Parliament to which they are elected. The duration of any single Parliament is limited to three years.

(i.) *Particulars of Elections.* Since the introduction of responsible government in New South Wales there have been twenty-one complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twenty-first opened on the 2nd October, 1907, and closed on the 14th September, 1910. The average duration of the Parliaments was two years and five months. The first session of the twenty-second Parliament was opened on the 14th October, 1910. Particulars of voting at the last seven elections are given below:—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES, 1894 to 1910.

Date of Opening of Parliament.	Electors upon the Roll.	Members Returned.	Members Unopposed.	Contested Electorates.			
				Electors upon the Roll.	Votes Recorded.	Percentage of Votes Recorded.	Percentage of Informal Votes.
7th August, 1894 ...	298,817	125	1	254,105	204,246	80.38	1.62
13th " 1895 ...	267,458	125	8	238,233	153,034	64.24	0.88
16th " 1898 ...	324,339	125	3	294,481	178,717	60.69	0.92
23rd July, 1901 ...	346,184	125	13	270,861	195,359	72.13	0.79
23rd August, 1904	Males 363,062	90	2	304,396	226,057	74.26	0.59
	Females 326,428			262,433	174,538	66.51	
2nd October, 1907	Males 392,845	90	5	370,715	267,301	72.10	2.87
	Females 353,055			336,680	204,650	60.78	
14th October, 1910	Males 458,626	90	3	444,242	322,129	72.47	1.78
	Females 409,069			400,139	262,154	65.24	

The franchise was extended to women in 1902, and was exercised for the first time at a State election in 1904.

## PARLIAMENTS AND ELECTORATES—

Particulars.	Commonwealth.	New South Wales.	Victoria.
<b>1. Senate and Legislative Councils.</b>			
<i>Number of Members</i> ...	36	62. May not be less than 21	34
<i>Qualification for Membership</i> ...	Adult British subjects natural-born or naturalised for 5 years, if (a) eligible to vote at the elections for the Senate, and (b) resident for at least 3 years within the Commonwealth	Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects of the age of 30 years or upwards, (a) if possessed of a freehold property of the annual value of at least £50 for one year previous to the election, and (b) in the case of naturalised subjects if a resident of the State for 10 years
<i>Period for which elected or nominated</i> ...	6 years	For life	6 years
<i>Allowance to Members</i> ...	£600 each per annum	None	None
<i>Qualification for Franchise</i>	Adult British subjects of either sex who have lived in Australia for 6 months continuously. Aboriginal natives of Australia, Asia, Africa, or the islands of the Pacific, except New Zealand, cannot vote at federal elections unless they have acquired a right to vote at elections for the Lower House of a State Parliament	(Nominated)	Adult British subjects of either sex, if either (a) the owner of a freehold of the annual value of £10 or of a leasehold of property rated at £15, or (b) a graduate of a British university, matriculated students of Melbourne University, qualified legal and medical practitioners, ministers of religion, certificated schoolmasters, and naval and military officers. Naturalised subjects must be of 3 years' standing, and must have resided in the State for 12 months
<b>2. House of Representatives, Legislative Assemblies, etc.</b>			
<i>Number of Members</i> ...	75	90	65
<i>Qualification for Membership</i> ...	The same as for the Senate	Male adult British subjects if qualified to vote at an election of members of the Legislative Assembly, unless disqualified under the Constitution Acts or the Federal Elections Act 1900	Male adult natural-born British subjects or aliens naturalised for the period of 5 years, if resident in the State for not less than 2 years
<i>Period for which elected</i> ...	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
<i>Allowance to Members</i> ...	£600 each per annum	£300 each per annum	£300 each per annum
<i>Qualification for Franchise</i>	The same as for the Senate	Adult naturalised subjects of either sex, who have resided in the State continuously for one year after naturalisation, and adult natural-born subjects who have resided in the State for a continuous period of 1 year	Adult natural-born subjects of either sex, or naturalised for 1 year prior to the 1st January or the 1st July in any year, if (a) enrolled as ratepayer, or (b) if holding an elector's right and enrolled on the general or supplementary roll. (These provisions only remain in force until a day to be notified by proclamation of the Governor-in-Council as the day on which the provisions of the Electoral Act 1910, came into effect)

SUMMARY, MARCH, 1911.

Queensland.	South Australia.	Western Australia.	Tasmania.
44	18	30	18
Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects if (a) of the age of 30 years or upwards, and (b) if resident in the State for 3 years	Male natural-born or naturalised British subjects of the age of 30 years or upwards, if (a) in the case of natural-born subjects, resident in the State for 2 years, and (b) in the case of naturalised subjects, if naturalised for 5 years previous to the election and resident in the State during that period	Male British subjects, either natural-born or for at least 5 yrs. naturalised, of not less than 30 years of age, qualified to vote at the election for the Legislative Council, and who have resided in Tasmania for any continuous period of 5 years, or for a period of 2 years immediately preceding the election
For life	6 years	6 years	6 years
None	£200 each per annum	£200 each per annum	£100 each per annum
(Nominated)	Adult British subjects of either sex who are either (a) owners of a freehold of the clear value of £50, (b) owners of a leasehold of the clear annual value of £20, with at least 3 years, to run or containing a right of purchase, (c) occupiers of a dwelling-house of the clear annual value of £17, (d) registered proprietors of a Crown lease on which there are improvements to the value of at least £50. Voters must have resided in State for 6 months prior to enrolment	Adult British subjects of either sex who have resided in the State for 6 months, and who either (a) own a freehold estate to the value of £100, (b) occupy a house or own leasehold property rated at £25, (c) hold Crown leases or licenses to the value of not less than £10 per annum, or (d) are on the electoral list of a municipality or road-board district in respect of property of the annual value of £25. Aboriginal natives may only acquire the franchise in respect of a freehold qualification	Adult British subjects of either sex who have resided in the State for 12 months, if either (a) possessing freehold to the annual value of £10 or leasehold to the value of £30, or (b) graduates of a British university, qualified legal or medical practitioners, officiating ministers of religion, or retired naval or military officers
72	40	50	30
All persons qualified and registered to vote at the election of members of the Legislative Assembly are eligible as members	Any person qualified for the franchise of the House of Assembly is eligible for membership	Male adult British subjects, if resident in the State for 12 months. Naturalised subjects must have been naturalised for 5 years and have resided in the State for 2 years previous to the election	Male adult British subjects, either natural-born or for at least 5 years naturalised, qualified to vote at the election for the House of Assembly, and who have resided in Tasmania for any continuous period of 5 years, or for a period of 2 years immediately preceding the election.
Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
£300 each per annum	£200 each per annum	£200 each per annum	£100 each per annum
Adult British subjects of either sex who either (a) have resided in Queensland for 12 months continuously and whose names are on the electoral roll, (b) own freehold estate of the value of £100, (c) have occupied a house of the annual value of £10 for at least 6 months, or (d) have a leasehold estate in possession of the annual value of £20 with not less than 18 months to run.	Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months continuously. In the Northern Territory only natural-born British subjects and naturalised Europeans or Americans may vote	Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months continuously and for a continuous period of 1 month in district	Adult natural-born or naturalised subjects of either sex who have resided in Tasmania for 6 months

**5. The Parliament of Victoria.**—Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of members of each House, as well as in the qualifications necessary for members and electors. The number of members in the Upper House in February, 1912, was 34, and in the Lower House, 65. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one half of the newly elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. The franchise was extended to women by the "Adult Suffrage Act, 1908." An elector for the Legislative Assembly may only vote once, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote. The preferential system of voting (see Section Miscellaneous hereinafter) was for the first time adopted in Victoria at the election held in November, 1911.

(i.) *Particulars of Elections.* Since the introduction of responsible government in Victoria there have been twenty-two complete Parliaments, the first of which was opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-second opened on the 7th January, 1909, and closed on the 24th October, 1911. The first session of the twenty-third Parliament opened on the 5th December, 1911, and terminated on the 4th January, 1912.

Statistics regarding the last six elections will be found below:—

#### PARTICULARS OF VICTORIAN ELECTIONS, 1902 to 1911.

Year.	Legislative Council.				Legislative Assembly.			
	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Per-centage.	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Per-centage.
1902 ...	134,087	*	*	*	290,241	216,063	141,471	65.47
1904 ...	172,526	104,865	66,182	63.11	264,709	223,600	149,192	66.72
1907 ...	180,738	78,512	27,152	34.58	261,088	191,131	117,098	61.26
1908 ...	185,234	*	*	*	263,876	164,919	88,461	53.64
1910 ...	240,520	136,479	40,053	35.21	487,661	*	*	*
1911 ...	249,481	*	*	*	701,451	619,644	394,189	63.61

\* Not contested.

As the table shews, the proportion of voters for the Legislative Council is considerably less than that for the Legislative Assembly. The number of persons who voted by post at the elections for the Legislative Assembly in 1911 was 12,362.

**6. The Parliament of Queensland.**—No limit is set by the Constitution Act to the number of members of the Legislative Council of Queensland, the total at the latest available date being forty-four. Members are appointed by the State Governor, and it is provided that not less than four-fifths of the members must consist of persons not holding any office under the Crown, except officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The members are nominated for life. The Legislative Assembly is composed of seventy-two members, returned from sixty-one electorates, eleven electorates returning two members each, the others being single electorates, but by "The Electoral Districts Act of 1910" the State is now divided into 72 electoral districts, each returning one member, and the General Election which took place in 1912 was in conformity with this new Act.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Queensland there have been seventeen complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the seventeenth

Parliament opened on the 3rd March, 1908, and closed on the 31st August, 1909. The eighteenth Parliament opened on 2nd November, 1909. Statistics regarding the elections of 1902, 1904, 1907, 1908, and 1909 are given below. Particulars as to the elections held in May, 1912, are not yet available:—

**ELECTIONS FOR QUEENSLAND LEGISLATIVE ASSEMBLY, 1902 to 1909.**

Year.	Number of Seats.	Number of Candidates Nominated.	Candidates sent to the Poll.	Electors Enrolled.			Electors who Voted.			Percentage of Electors Voting in Contested Electorates.		
				Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1902	72	159	154	108,548	—	108,548	80,076	—	80,076	78.88	—	78.88
1904	72	140	117	103,943	—	103,943	60,265	—	60,265	74.16	—	74.16
1907	72	185	179	125,140	95,049	220,189	—	—	152,049	73.42	68.64	71.61
1908	72	137	125	117,385	88,507	205,892	77,632	61,115	138,747	66.13	69.05	67.39
1909	72	145	133	135,841	106,913	242,754	89,609	66,809	156,418	75.34	69.36	72.67

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under Act 5 Edw. VII., No. 1. Some of the returns did not separate the sexes in the figures respecting the number of electors who voted, and the percentage of males and females was therefore calculated on the total returns where the subdivision was made.

**7. Parliament of South Australia.**—In this State there is a Legislative Council composed of eighteen members and a House of Assembly with forty members, both chambers being elective. Under the Constitution Amendment Act, 1908, the State of South Australia is divided into four Council Districts, of which one returns six members, and the other three return four members each, to the Legislative Council. For the purpose of electing members of the House of Assembly the State is divided into twelve electoral districts. One of the electoral districts (Torrens) returns five members; two (Adelaide and Alexandra) four members each; and the others return three members each.

(i.) *Particulars of Elections.* Since the inauguration of responsible government in South Australia there have been nineteen complete Parliaments, the first of which was opened on the 22nd April, 1857, and dissolved on the 1st September, 1859, while the nineteenth was opened on the 30th November, 1906, and terminated on the 28th February, 1910. The first session of the twentieth Parliament opened on the 2nd June, 1910. The elections for the last-named Parliament were held on the 2nd April, 1910. Particulars of voting at the elections of 1900, 1902, 1905, and 1910 are given below:—

**PARLIAMENTARY ELECTIONS IN SOUTH AUSTRALIA, 1900 to 1910.**

Year.	Electors on Rolls.			Electors Who Voted.			Percentage of Electors Voting.	
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
<b>LEGISLATIVE COUNCIL.</b>								
1900	38,688	9,854	48,542	21,403	3,907	25,310	55.32	39.65
1902	38,413	13,496	51,909	29,978	7,940	37,918	78.04	58.83
1905	39,011	13,873	52,884	28,820	8,328	37,148	73.88	60.03
1910	48,145	16,157	64,302	32,540	9,356	41,896	67.59	57.91
<b>LEGISLATIVE ASSEMBLY.</b>								
1902	77,147	72,080	149,177	53,471	36,545	90,016	62.14	49.22
1905	95,396	92,249	187,645	64,330	50,246	114,576	67.43	54.47
1906	96,724	93,438	190,162	60,109	45,997	106,106	69.31	50.73
1910	94,656	88,762	183,418	73,464	56,830	130,294	77.61	64.03

The proportions of votes recorded to total persons entitled to vote in each of the four years given above were as follows:—Legislative Council, 52.14, 73.05, 70.24, and 77.64 per cent.; and Legislative Assembly, 60.34, 61.06, 55.80, and 71.04 per cent.

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under Act No. 16 of 1894), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

**8. Parliament of Western Australia.**—In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten electorates returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral divisions. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the senior member for the time being for each province retires. Seniority is determined (a) by date of election, (b) if two or more members are elected on the same day, then the senior is the one who polled the least number of votes, (c) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Western Australia there have been seven complete Parliaments, the first of which was opened on the 30th December, 1890, and was dissolved on the 22nd March, 1893, while the seventh Parliament was opened on the 10th November, 1908, and closed on the 3rd February, 1911. The first session of the eighth Parliament commenced on the 1st November, 1911. Particulars relating to the last five parliamentary elections are given in the table below. The figures refer to electors for the Assembly only, no returns being published with regard to voting at Council elections.

#### ELECTIONS FOR LEGISLATIVE ASSEMBLY, WESTERN AUSTRALIA, 1901 to 1911.

Year.	Electors on the Roll.			In Contested Districts.			Votes Recorded.			Percentage of Electors Voting.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1901	74,874	16,648	91,522	67,967	14,775	82,742	29,832	8,255	38,087	44	56	46
1904	108,861	54,965	163,826	88,524	49,791	138,315	43,285	23,500	66,785	49	47	48
1905	79,025	42,697	121,722	65,296	36,706	102,002	33,482	19,435	52,917	51	53	52
1908	83,060	52,919	135,979	69,277	44,804	114,081	46,411	29,412	75,823	67	66	66
1911	91,814	60,831	152,645	71,675	50,700	122,375	53,355	38,281	91,636	74	75	75

**9. Parliament of Tasmania.**—In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. For the Parliament which expired in March, 1909, there were thirty-five House of Assembly districts, each district returning one member, but, in accordance with the Constitution Amendment Act of 1906, upon the expiration of the last Assembly, either by dissolution or by effluxion of time, there are now five House of Assembly districts, viz., the Commonwealth electoral districts, each district returning six members. This latter system came into force at the 1909 elections.

(i.) *Particulars of Elections.* The first Tasmanian Parliament opened on 2nd December, 1856, and closed on 8th May, 1861. There have been fifteen complete Parliaments since the inauguration of responsible government, the last one opening on 29th May, 1906, and dissolving on 26th March, 1909. The sixteenth Parliament opened on 29th June, 1909. *Particulars of the voting at the last four elections* (excluding the elections held in April, 1912, for which particulars are not yet available) are given hereunder:—

#### ELECTIONS, HOUSE OF ASSEMBLY, TASMANIA, 1900 to 1909.

Year.	Electors on Roll.		Electors in Contested Districts.		Votes Recorded.		Percentage of Electors Voting.	
	Males	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1900 ...	39,002	...	29,022	...	18,872	...	65.02	...
*1903 ...	43,999	...	40,267	...	23,766	...	59.87	...
†1906 ...	47,400	41,629	37,120	33,415	23,128	17,194	62.30	51.46
†1909 ...	50,221	45,563	50,221	45,563	30,509	19,893	60.74	43.67

\* Manhood suffrage, Act 64 Vic., No. 5. † Universal adult suffrage, Act 3 Edward VII., No. 13.

### § 3. Administrative Government.

In each State, as well as in the Commonwealth, the Government is administered by a number of chief departments, on lines similar to those on which administrative government is carried on in the United Kingdom. Reference has already been made to the creation of the Commonwealth Departments (see pages 787 and 788). In the States the number and functions of the administrative departments vary considerably. This matter has also been referred to hereinbefore (see page 812). In many cases more than one department is under the control of a single Minister. The tabular statement given on this page and on the following pages shews the sub-departments, branches, etc., of each Ministerial Department in the Commonwealth and in each State, together with the Acts administered and other more important matters dealt with.

#### COMMONWEALTH ADMINISTRATIVE GOVERNMENT, 1912.

Departments, Sub-departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Prime Minister's— (a) Auditor-General. (b) Public Service Commissioner (as from 1st July, 1912).	Arbitration (Public Service), Commonwealth Public Service (as from 1st July, 1912), Commonwealth Salaries, Parliamentary Allowances, Petherick Collection, Royal Commissions.	Auditor - General and Staff, Communication with the Governor-General, Communication with the States, Officers of the Parliament, Public Service Commissioner and Staff, Royal Commissions, <i>The Commonwealth of Australia Gazette</i> , the Federal Executive Council.
2. Attorney-General's— (a) Crown-Solicitor. (b) High Court. (c) Patents, Copyright, Designs, and Trade Marks.	Acts Interpretation, Amendments Incorporation, Bills of Exchange, Commonwealth Conciliation and Arbitration, Copyright, Designs, Evidence, Extradition, High Court Procedure, Judiciary, Jury Exemption, Parliamentary Papers, Patents, Trade-marks and Designs, Rules Publication, Service and Execution of Process, State Law and Records Recognition, Statutory Declarations.	Bankruptcy and Insolvency, Bills of exchange and Promissory Notes, Conciliation and Arbitration, Copyright, Crown Law Offices, Designs, Divorce and Matrimonial Cases, Foreign Corporations, Judiciary and Courts, Marriage, Patents, Parliamentary Drafting, Recognition throughout Commonwealth of State laws, records, and judicial proceedings, Service and Execution throughout Commonwealth of State process and judgments, Trade-marks.

## COMMONWEALTH ADMINISTRATIVE GOVERNMENT, 1912—Continued.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
<b>3. Home Affairs—</b> (a) Bureau of Census and Statistics. (b) Electoral Office. (c) Lands and Surveys. (d) Meteorological Office. (e) Public Works. (f) Public Service Commissioner (until 1st July, 1912).	Census and Statistics, Commonwealth Public Service (until 1st July, 1912), Commonwealth Electoral, Commonwealth Franchise, Constitution Alteration (Senate Elections), Disputed Elections and Qualifications, Electoral Divisions, Electoral Validating, Governor-General's Residences, Kalgoorlie to Port Augusta Railway, Lands Acquisition, Meteorology, Referendum (Constitution Alteration), Representation, Seat of Government, Seat of Government Acceptance, Seat of Government (Administration), Senate Elections.	Astronomy, Census and Statistics, Elections, Franchise, Lands, Meteorology, Public Service Commissioner (until 1st July, 1912), Public Works, Railways, Representation of the People, Rivers, Seat of Government, Surveys.
<b>4. Treasury—</b> (a) Land Tax and Assessment. (b) Old Age Pensions.	Appropriation, Audit, Australian Notes, Bank Notes Tax, Coinage, Commonwealth Bank, Commonwealth Inscribed Stock, Constitution Alteration (State Debts), Invalid and Old-Age Pensions, Land Tax, Land Tax Assessment, Life Assurance (Companies), Loan Act, Marine Insurance, Supply, Surplus Revenue, Trust Fund Advances.	Appropriation and Supply, Banking, Currency, Coin and Legal Tender, Government Printer, Insurance, Invalid and Old-Age Pensions, Public Loans, Public Moneys, State Debts, Taxation (other than duties of Customs and of Excise).
<b>5. Trade and Customs—</b> (a) Customs and Excise. (b) Fisheries. (c) Navigation. (d) Quarantine.	Australian Industries Preservation, Beer Excise, Bounties, Commerce (trade descriptions), Customs, Customs (Inter-State Accounts), Customs Tariff, Distillation, Excise, Excise Procedure, Excise Tariff, Lighthouse, Manufactures Encouragement, Quarantine, Sea-carriage of Goods, Seamen's Compensation, Secret Commissions, Shale Oils Bounties, Spirits, Sugar Bounty.	Bounties, Bureau of Agriculture, Customs and Excise, Fisheries (other than Pearl Shell or Trepang) in Australian waters beyond territorial limits, Inter-State Commission, Lighthouses, Lightships, Beacons and Buoys, Quarantine, Trade and Commerce (including Navigation and Shipping), Weights and Measures.
<b>6. External Affairs—</b> (a) Advertising and Immigration. (b) High Commissioner's Office. (c) Northern Territory. (d) Papua.	Contract Immigrants, Emigration, High Commissioner, Immigration Restriction, Naturalisation, Northern Territory Acceptance, Northern Territory (Administration), Pacific Island Labourers, Papua.	Consular Appointments, External Affairs, Pearl Shell and Trepang Fisheries in Australian waters beyond territorial limits, High Commissioner, Immigration and Emigration, Influx of Criminals, Naturalisation and Aliens, Passports, People of Races (other than the Aboriginal races in any State) for whom it is deemed necessary to make special laws, Relations with the Pacific Islands, Territories of the Commonwealth.
<b>7. Defence—</b> (a) Military Board (b) Naval Board	Defence, Naval Agreement, Naval Defence.	Control of Railways with respect to transport for Naval and Military purposes, Naval and Military Defence, Naval and Military Factories and Workshops.
<b>8. Postmaster-General's—</b>	Pacific Cable, Post and Telegraph, Post and Telegraph Rates, Purchase Telephone Lines Acquisition, Telegraph, Wireless Telegraphy.	Postal, Telegraph and other like services.



## NEW SOUTH WALES.—ADMINISTRATIVE GOVERNMENT, 1912.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
<p>1. Premier's Office*—  (a) Governor's Establishment. (b) Executive Council Office. (c) Agent-General. (d) Immigration &amp; Tourist Bureau.</p>	...	Is charged with—Departmental business connected with the Houses of Parliament (including official publication of debates), foreign correspondence, Executive Council, correspondence with Colonial, Commonwealth, and State Governments, the Agent-General, and with Immigration matters.
<p>2. Chief Secretary—  (a) Audit Dept. (b) Police Dept. (c) Inspector-General of Insane. (d) Public Health Dept. (e) Master in Lunacy. (f) Medical Board. (g) Inspector-General of Hospitals and Charities. (h) State Fisheries. (i) Aborigines Protection Board. (j) Board of Fire Commissioners. (k) Electoral Office. (l) International Exchanges Board. (m) Registry of Friendly Societies &amp; Trade Unions. (n) Bureau of Microbiology. (o) Bureau of Statistics. (p) Dental Board.</p>	<p>Parliamentary Electorates and Elections, Electorates Redistribution, Women's Franchise, Lunacy, Audit, Agreements Validating, Apprentices, Banks and Bank Holidays, Birds Protection, Bread, Building &amp; Co-operative Societies, Sunday Closing, Careless Use of Fire, Constitution, Dentists, Destitute Children's Society, Dog and Goat, Fire Brigades, Fisheries, Friendly Societies, Gaming and Betting, Inebriates, Medical Practitioners, Metropolitan Traffic, Native Animals Protection, Native Dogs Destruction, Noxious Trades, Obscene Publications, Police Offences, Police Regulation, Printing, Public Entertainments, Public Hospitals, Public Health, Sydney Corporation, Vagrancy, Weights and Measures, Pure Food, Theatres, etc., Cattle Slaughtering, etc., Dairies Supervision, Juvenile Smoking Suppression, Motor Traffic, Aborigines Protection.</p>	<p>Is charged with—the public seal, execution of capital sentences, appointment of magistrates, the police, public health, issue of theatrical &amp; racecourse licenses, care and treatment of insane and inebriates, hospitals &amp; charitable institutions, business relating to ecclesiastical establishments, supervision of dairies, general elections, franchise, statistics, and all matters of business not expressly assigned to any other department.</p>
<p>3. Treasury—  (a) Stamp Duties Office. (b) Taxation Dept. (c) Government Printing Office. (d) Explosives Dept. (e) Shipping Offices, Sydney and Newcastle. (f) Navigation Dept. (g) Resumed Properties Office. (h) Stores Supply Department.</p> <p>The following departments are connected with the Treasury though administered by Commissioners:—  (a) Government Railways and Tramways. (b) Sydney Harbour Trust. (c) Government Savings Bank.</p>	<p>Stamp Duties, Land &amp; Income Tax, Merchant Shipping, Navigation, Wharfrage and Tonnage Rates, Government Railways, Railways Commissioners Appointments, Sydney Harbour Trust, Government Savings Bank, Pharmacy, Explosives.</p>	<p>Finance, management of Consolidated Revenue, public works, closer settlement, Treasury guarantee, and general loan funds, also of public debt, resumed properties, payment of Imperial and State pensions, purchase and issue of stores, Govt. printing office, Govt. railways and tramways, Sydney Harbour Trust, navigation and shipping, storage and issue of explosives, engagement and discharge of seamen in British and colonial vessels, tenders and contracts for public supplies, etc., State clothing factory.</p>
<p>4. Dept. of Attorney-General and of Justice—  (a) Prothonotary &amp; Registrar in Divorce. (b) Master in Equity. (c) Sheriff. (d) Registrar in Bankruptcy. (e) Registrar of Probates, etc. (f) Registrar Industrial Disputes. (g) Crown Solicitor. (h) Parliamentary Draftsman. (i) Clerk of the Peace. (j) Registrar of Sydney District Court. (k) Registrar-General. (l) City Coroner. (m) Children's Court. (n) Petty Sessions. (o) Police Magistrates, Clerks of Petty Sessions and Registrars of District Courts. (p) Prisons Department. (q) Public Service Board.</p>	<p>Auctioneers, Bankruptcy, Billiards, Companies, Contractors' Debts, Coroners, Crimes, District Courts, Fines and Penalties, Habitual Criminals, Hawkers and Pedlars, Industrial Disputes, Interstate Debts, Jury, Justices, Legal Process, Liens on Crops, Liquor, Lotteries, Marriage, Money-lenders, Crown Suits, Defamation, Newspapers, Pawnbrokers, Prisons, Public Service, Real Property, Registration of Births, Deaths, and Marriages, of Deeds of Firms, Sheriff, Small Debts Recovery, Stage Carriages, Wills, Probate and Administration.</p>	<p>Is charged with—business relating to the offices of the Chief Justice, and Puisne Judges, Supreme Courts, Industrial disputes and District Courts, Circuit Courts and Quarter Sessions, deals with all matters relating to remission of sentences, or of fines or estates or control of Court-houses, etc., and advises the Govt. on all legal questions.</p>

\* This is not a separate department, but is attached to the Ministerial department held by the Premier for the time being.

## NEW SOUTH WALES (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
<b>5. Department of Lands—</b> (a) Survey of Lands. (b) Local Land Boards. (c) Trigonometrical Survey. (d) Land Appeal Court. (e) Western Land Board. (f) Closer Settlement Advisory Boards.	Crown Lands, Newcastle Pasture Reserve, Conditional Purchaser's Relief, Public Roads, Public Parks, Public Gates, Public Trusts, Labour Settlements, Appraisement, Prickly Pear Destruction, Western Lands, Closer Settlement, Block-holders, Church and School Lands, Murrumbidgee Irrigation Act.	All business arising from tenures created by Crown Lands Acts and other Acts mentioned, dedications and reservations, exchanges of land, proclamation of towns and villages, business connected with Land Appeal Court, local boards, district surveyors, and Crown land agents, survey of Crown lands, and triangulation survey of State, and making lands available for settlement.
<b>6. Dept. of Public Works.—</b> (a) Architects Branch. (b) Irrigation and Drainage. (c) Railway and Tramway Construction, Harbours and Water Supply. (d) Roads and Bridges. (e) Engineering Drafting. (f) Survey Drafting. (g) Survey. (h) Valuation. (i) Local Government. (j) Accounts. (k) Bonds and Contracts. (l) Dock Establishment. (m) Metropolitan Board of Water Supply and Sewerage. (n) Hunter District Water Supply and Sewerage Board, and (o) Country Towns Water Supply and Sewerage.	Drainage Promotion, Public Watering Places, Water Rights, Water and Drainage, Artesian Wells, Public Works, Country Towns Water and Sewerage, Metropolitan and Hunter District Water and Sewerage, Scaffolding and Lifts, Local Government, and all Acts connected with authorised Public Works.	Erection, maintenance, and repair of public buildings and works; construction of harbour works, docks, water supply and sewerage works, water conservation and irrigation works, artesian bores, tanks and wells, railways and tramways; "National" roads and bridges; surveys and valuations; administration of Local Government Acts; construction of dredges and punts, machinery.
<b>7. Department of Mines—</b> (a) Ministerial Branch. (b) Registrar and Inquiry. (c) Account and Examining. (d) Lease. (e) Charting and Mining Survey. (f) Geological Survey. (g) Geological Survey Laboratory. (h) Inspectors of Mines and Drills. (i) Miners' Accident Relief Board. (j) Prospecting Board. (k) Mining Museum. (l) Sludge Abatement Board. (m) Coalfields. (n) Correspondence. (o) Records.	Mining, Miners' Accident Relief, Mines Inspection, Coal Mine Regulation.	All matters relating to mining generally; geological and mining surveys; assays, inspection of mines, miners' accident relief, advances to prospectors.
<b>8. Dept. of Agriculture—</b> (a) Administrative. (b) Accounts. (c) Stock. (d) Forestry. (e) Superintendent and Chief Inspector. (f) Fruit Export and Irrigation. (g) Exports and Cold Storage. (h) Library and "Agricultural Gazette." (i) Sheep and Wool Expert. (j) Dairy Expert. (k) Chemist. (l) Entomologist. (m) Botanic Gardens, Centennial Park, &c. (n) Hawkesbury Agricultural College. (o) Experiment Demonstration and School Farms. (p) Agricultural Museum. (q) Viticultural Expert.	Vine and Vegetation Diseases, Wine Adulteration, Fertilisers, Pastures Protection, Commons, Stock, Stock Diseases, Forestry, Wentworth Irrigation, Hay Irrigation, Trustees of Show Grounds, Enabling.	Matters relating to agriculture, forestry and stock, including experiment and demonstration farms, stud farms, viticultural stations and nurseries, experiment plots, Agricultural college, Botanic Gardens-Centennial Park and Sydney Domain, Nursery Gardens, Campbelltown; irrigation farms, and supervision of dairies for instructional purposes; destruction and prevention of fruit pests; diseases of stock; publication of "Agricultural Gazette and Bulletins"; and general advice and instruction on agricultural matters.

## NEW SOUTH WALES—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Other Matters dealt with or under Control.
<b>9. Dept. of Public Instruction—</b> (a) Public Library. (b) Observatory. (c) National Art Gallery. (d) Australian Museum. (e) Training College for Teachers. (f) Training College (Short Course), Hereford House. (g) Technical Education Branch. (h) Technical High School. (i) Hurlstone Agricultural High School. (j) Technological Museums. (k) State Children's Relief Dept., Ormond House Shelter, and Mittagong Farm Homes. (l) Brush Farm Home for Boys. (m) Industrial School and Training Home for Girls. (n) Public Schools' Amateur Athletic Association. (o) Sydney University.	Public Instruction, Free Education, State Children's Relief, Children's Protection, Infant Protection, Neglected Children and Juvenile Offenders, Anatomy, Public Library and Art Gallery, Australian Museum, Schools of Arts, University and University Colleges, Sydney Grammar School.	All matters dealing with education; high schools, district schools, continuation (artisan, commercial and domestic) schools, kindergarten and subsidised teaching, technical education, scholarships, qualifying, intermediate and leaving certificates, medical inspection of school children, anthropometrical survey of school children, rural camp schools for city children, school agriculture, school conveyance system, physical training, swimming, &c.
<b>10. Department of Labour and Industry.—</b>	Early Closing, Factories and Shops, Shearers' Accommodation, Apprentices, Truck, Minimum Wage, Saturday Half Holiday.	All matters relating to regulation of working conditions in factories and shops, early closing, wages awards, industrial matters generally, and State Labour Bureau.

## VICTORIA.—ADMINISTRATIVE GOVERNMENT, 1912.

<b>1. Chief Secretary—</b> (a) Board for the Protection of Aborigines. (b) Public Service Commissioner. (c) Registry of Friendly Societies. (d) Observatory. (e) Government Statist. (f) Marine Board. (g) Audit. (h) Lunacy. (i) Explosives. (j) Mercantile. (k) Marine. (l) Neglected Children and Reformatory Schools. (m) Penal and Gaols. (n) Police. (o) Premier's Office. (p) Inspection of Stores. (q) Public Library. (r) Government Shorthand Writer.	Aborigines, Animals Protection, Constitution, Crimes, Explosives, Fire Brigades, Friendly Societies, Gaols, Inebriates, Libraries, Licensing (part), Lunacy, Marine, Marine Stores and Old Metals, Medical, Neglected Children, Poisons, Police Offences, Police Regulations, Public Service, Registration of Births, Deaths and Marriages, Theatres, Weights and Measures, Lotteries and Gaming, Dentists, Indeterminate Sentences, Infant Life Protection, Statistics, and Opium (part), Motor-car, Electoral, Matches, Preferential Voting.	Departmental business connected with the Houses of Parliament, execution of capital sentences, local option, prisons, the Govt. Gazette, Public Library, Museum, and Art Gallery, "Hansard," Police, Public and Bank Holidays, and other matters as indicated in columns 1 and 2.
<b>2. Attorney-General and Minister of Justice—</b> (a) Supreme Court. (b) County Court. (c) Crown Law Offices. (d) Crown Solicitor. (e) Master in Equity and Lunacy. (f) Prothonotary. (g) Registrar of Titles. (h) Sheriffs.	Supreme Court, County Court, Coroners, Justices, Licensing (part), Probate, Crimes, Juries, Declarations & Affidavits, Children's Courts, Companies, Conveyancing, Crown Remedies, Registration of Firms, Hawkers, Insolvency, Instruments, Mines (part), Money-lenders, Pawnbrokers, Real Property, Transfer of Land, Stamps, Trusts, Book Debts, and Imprisonment of Fraudulent Debtors.	Bankruptcy and insolvency, administration and probate, control of courthouses, etc., preparation of legal instruments, administration of justice generally, and advice to Government in all legal questions.
<b>3. Treasury—</b> (a) Land and Income Tax Office. (b) Printing Office. (c) Curator of Intestate Estates. (d) Charities. (e) Tender Board.	Auction Sales, Hospitals and Charities, Public Moneys, Savings Bank, Income Tax, Licensing (part), and Acts relating to loans, State Land Tax.	Conduct of finances, Government banking, the public debt, preparation of Estimates and Budget, financial aid to charities, endowment to municipal institutions.

## VICTORIA (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
4. Public Instruction—	Education, Teachers, Registration of Teachers and Schools.	Education generally, supervision of the Training College, registration of teachers & schools.
5. Railways—	Railways and other Acts relating to specific railways and railway loans.	Management and maintenance of Government railways and electric trams.
6. Mines—	Mines, Gold Buyers, Boilers Inspection, Mines Development, Coal Mines Regulation.	Deals with applications for mining leases and licenses, water-rights, prospecting.
7. Water Supply—	Water, Waterworks Construction, Water Supply, Loans Application.	Administration of various water works trusts, construction of water works and irrigation systems, boring for water.
8. Agricultural—	Agricultural Colleges, Vegetation Diseases, Stock Diseases, Milk and Dairy Supervision, Artificial Manures, Thistle, and Vine Diseases, Sheep Dipping.	Agricultural colleges & experimental farms, orchards, vineyards, and horticultural gardens, dissemination of information regarding agricultural etc. pursuits, lectures and demonstrations in practical and theoretical agriculture, etc., "Agricultural Journal" and "Agricultural Year Book."
9. Lands— (a) Survey. (b) Botanic Gardens and Domain. (c) Land Purchase & Management Board. (d) Advertising & Intelligence Department (Immigration).	Lands, Closer Settlement, Vermin Destruction, Local Government (part), Seed Wheat Advances, Bush Fires Loan, State Aid Abolition, Mines (part)	Survey, sale, and administration of Crown lands, including occupation for industrial, agricultural, and pastoral purposes. Immigration, assisted and nominated passages.
10. Public Works— (a) Roads and Bridges and Local Govt. Brch. (b) State Schools. (c) Dredges and Snagging. (d) Ports and Harbours.	Local Government, Fisheries, Game, Electric Lighting and Power, Pounds, Dog, Unused Roads and Water Frontages, Tramways, Drainage Areas, Municipal Grounds, Upper Yarra Traffic.	Construction of public works, erection and repairs of all Government buildings, railway construction, lighthouses, buoys, and signal stations, snagging operations in rivers, Alfred Graving Dock, Government steamer, immigration, Labour Bureau.
11. Labour—	Factories and Shops, Servants, Registry Office.	Inspection of factories, work-shops and shops, wages boards.
12. Forests—	Forests.	
13. Public Health—	Health, Cemeteries, Pure Food.	Public health generally, inspection of food.

## QUEENSLAND.—ADMINISTRATIVE GOVERNMENT, 1912.

1. Chief Secretary— (a) Auditor-General. (b) Agent-General. (c) Board of Exchange of Publications. (d) Govt. Residency, Thursday Island. (e) Immigration Dept. (f) Intelligence and Tourist Bureau. (g) S.S. <i>Lucinda</i> . (h) S.S. <i>John Douglas</i> . (i) Pub. Library, Art Gallery, and Museum.	Constitution, Extradition, Immigration, Officials in Parliament, Public Service, Standard Time, Influx of Criminals Prevention.	Commissions, etc., under Public Seal of State, foreign correspondence, immigration, justices of the peace, legislation, public service, communications with Governor and with States, Commonwealth, British, colonial, and foreign Governments.
2. Public Instruction—	University, Grammar Schools, State Education, Central Technical College.	Primary education, schools of art and technical colleges, grammar schools.
3. Railways—	Railways, Railway Construction, (Land Subsidy), Railways (Employes' Appeal).	Railways and tramways management and construction.

## QUEENSLAND (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
<b>4. Home Secretary—</b> (a) Government Advertising Board. (b) Electoral Department. (c) Board of Health. (d) Registrar-General. (e) Dental Board. (f) Local Auditors Board. (g) Medical and Pharmacy Board. (h) Aborigines. (i) Benevolent Asylum. (j) Police. (k) Prisons. (l) Orphanages.	Aboriginals, Bank Holidays, Brisb. Traffic, Careless Use of Fire, Carriers, Cemetery, Charitable Institutions, Children's Protection, Contagious Diseases, Dental, Elections, Fencing, Fire Brigades, Hawkers, Health, Hospital, Industrial Schools, Inebriates, Insanity, Legitimations, Leprosy, Licensing, Local Govt., Medical, Native Labourers, Party Processions, Pharmacy, Police, Prisons, Quarantine, Religions, etc., Institutions, Registration Births, etc., Poisons, Statistical Returns, Water Police.	Is charged with business connected with—aboriginals, cemeteries, elections, fire brigades, hospitals and charitable institutions, industrial and reformatory schools, insanity, lazarets, police, prisons, public health, quarantine, remission and execution of sentences and penalties, theatres, miscellaneous services, and all other matters of internal arrangement not confided to any other Minister.
<b>5. Treasury—</b> (a) Government Analyst. (b) Govt. Printing Office. (c) Government Savings Bank. (d) Government Stores. (e) Harbours and Rivers Department. (f) Income Tax Department. (g) Marine Department. (h) Marine Board. (i) Water Supply Department. (j) Compt. of Central Sugar Mills.	Coast Survey, Explosive, Fisheries, Savings Banks, Annuities, Harbour Boards, Harbour Dues, Income Tax, Irrigation, Loans, Local Wks, Loans, Merch't Shipping and Seamen's, Navigation, Oyster, Pearlshell and Bêche-de-mer, Port Dues Revision, Firms Registration, Stock Inscription, Sugar Works, Treasury Notes and Bills, Tobacco, Water Authorities, Weights and Measures.	Central sugar mills, dredges, fisheries, finance generally, harbour boards and improvements, navigation, ports and harbours, powder magazines, public debt, savings banks, taxation generally, trade and commerce, wharves and jetties.
<b>6. Attorney-General—</b> (a) Crown Solicitor. (b) Supreme & District Courts. (c) Curator in Intestacy and Insanity. (d) Trustees in Insolvency. (e) Registry of Friendly Societies. (f) Registry of Titles. (g) Com. of Stamps. (h) Police Magistrates. (i) Petty Sessions.	Building Societies, Companies, District Courts, Friendly Societies, Inquests of Death, Inquest on Fires, Insolvency, Intestacy, Jury, Printing, Real Property, Small Debts, Stamp, Succession and Probate, Supreme Court, Totalisator Restriction, Totalisator Tax, Trade Unions.	Administration of justice generally, advising Government on all legal questions, judicial establishments, courts of petty sessions, preparation of all legal instruments and contracts.
<b>7. Mines—</b> (a) Geological Survey. (b) Mining Registries. (c) Mines Inspectrs. (d) Gold Wardens.	Gold Mining, Mineral Lands, School of Mines.	Geological survey, mineral fields, regulation of mines, Charters Towers School of Mines.
<b>8. Public Lands—</b> (a) District Land Offices. (b) District Survey Offices. (c) Survey Office.	Agric. Lands Purchase, Crown Lands, Pastl. Leases, Pub. Parks, Pub. Works Land Resumption, Rabbit, Marsupial-proof Fencing, Trustees of Public Lands.	Destruction, etc., of rabbits, opening and closing roads, reserves, survey, sale, settlement, and occupation of Crown lands, town commonages.
<b>9. Agriculture—</b> (a) Agricultural College. (b) Inspectors of Stock and Sheep & Registry of Brands. (c) Botanic Gardens. (d) State Farms and Nurseries. (e) Sugar Experiment Stations. (f) Bacteriological Institute.	Agric. Bank, Brands, Dairy, Diseases in Plants, Sheep and Stock, Game & Fish Acclimatisation, Grape-vine Diseases, Live Stock and Meat Export, Marsupial Boards, Meat and Dairy Produce Encouragement, Native Birds Protection, Slaughtering, Shearers' and Sugar-workers', Sugar Experiment Stations.	Agric. College, Botanic Gardens, brands (horses, sheep, and cattle), diseases in animals and plants, loans in aid of co-operative agric. production, marsupial destruction, meat and dairy produce encouragement, slaughter of cattle for consumption, State farms and nurseries, sugar experiment stations.
<b>10. Public Works—</b> (a) Government Architect. (b) Engineer for Bridges. (c) Director of Labour. (d) Factories etc. Inspectors. (e) Inspector of Machinery.	Brisb. Water Supply, Electric Light and Power, Factories and Shops, Wages Bds., Inspection of Machinery and Scaffolding.	Construction of public buildings, State-school buildings, bridges, hospitals, electric light and power stations.

## SOUTH AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1912.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
<b>1. Chief Secretary—</b> (a) Statistical Dept. (b) Audit. (c) Public Actuary. (d) Sheriff. (e) Registry-General. (f) Government Printer. (g) Police. (h) Central Board of Health. (i) Hospitals. (j) Lunatic Asylum. (k) Destitute Persons. (l) State Children. (m) Government Shorthand Writer. (n) Photolithographic Department.	Civil Service, Audit, Friendly Societies, Registration of Births, Deaths, and Marriages, Prison, Police Prisons, Sheriff, Legitimation, Public Hospitals, Lunatics, Destitute Persons, Affiliation Law, State Children's, Health, Vaccination, Sale of Food and Drugs, Places and Public Entertainments, and other Acts dealing with law and order.	Chamber of Manufactures, Civil Service exams., fire brigades, Government Gazette, kerosene inspectors, public charities, Royal commissions, prisons, State printing, inspectors of public houses, administration of hospitals, asylums, etc., pub health, law and order, police prisons, photolithography, and correspondence with Governor, judges of Supreme Court, Leg. Council, House of Assembly, other Governments, and consuls.
<b>2. Treasury—</b> (a) Land and Income Tax Department. (b) Stamp Duty Department. (c) Agent General in London.	Motor Vehicles, Seed Wheat, Unclaimed Moneys, Oyster Fishery, Pawnbrokers, Appraisers, Auctioneers, Publicans' Licenses, Hawkers' Licenses, Taxation, Stamp Duty.	Banking, finance and taxation generally, Imperial and other Government pensions, Public Service Superannuation Fund.
<b>3. Attorney-General—</b> (a) Law Officers. (b) Pub. Trustees. (c) Curator of Convicts' Estates. (d) Supreme Ct. (e) Registrars of Industrial Soc., etc., in Admiralty, of Probates, of Companies, and of Building Soc. (f) Insolvency Court. (g) Police and Local Courts. (h) Licensing Benches. (i) Registrar-General of Deeds. (j) Coroners. (k) Electoral Department.	Administration and Probate, Public Trustee, Supreme Court, Legal Practitioners, Succession Duties, Companies, Insolvency, Police, Criminal Law, Local Courts, Real Property, Bills of Sale, Preferable Liens, Workmen's Liens, Deposit of Deeds, Coroners' Electoral Code, Acts in which magistrates have jurisdiction, ancient lights.	Responsible for Government Parliamentary bills and administration of Local Option and Electoral Acts. Deals with issue of summonses and warrants and with preparing informations and complaints, licenses, franchise, appeals from courts.
<b>4. Crown Lands and Immigration, and Mines—</b> (a) Crown Lands Office. (b) Roads Department. (c) Woods and Forests Department. (d) Tourist Bureau. (e) Intelligence Department. (f) Survey Department. (g) Fisheries Department.	Corporations, District Councils, Dog, Fisheries, Manufacturing Districts, Ornamental Grounds, Blocker's Loan, Fences, Bird Protection, Gams, National Park, Noxious Weeds, Wild Dog and Foxes, Reclaimed Swamps and Irrigation, Roads, Main Roads, Woods and Forests, Pastoral, Vermin, Licensed Surveyors, Weights and Measures, Botanic Garden, Advances to Settlers.	Matters affecting municipal corporations respecting the Acts under which they are constituted. Payment of main road grants, subsidies, and license fees. All matters affecting Crown lands roads and bridges, immigration, forest reserves, surveys, botanic gardens, fisheries, issue of monthly bulletins.
<b>5. Public Works—</b> (a) Railways Department. (b) Engineer-in-Chief's Department. (c) Hydraulic Engineer's Department. (d) Works and Buildings and Labour Bureau Department. (e) Marine Board Department. (f) Control of Government Wharves Department. (g) Supply and Tender Board Department. (h) Aborigines Department.	Railway Commissioners, Railways Service Appeal Board, Refreshment Rooms, South-eastern Drainage, Water Conservation, Waterworks, Sewers, Murray River Works, Adelaide Cemetery and Cremation, Marine Board and Navigation, Renmark Irrigation Trust, Municipal Tramways Trust.	Construction and maintenance of railways, south-eastern drainage works, water conservation works and artesian boring, construction of roads outside district councils, town and country waterworks, Adelaide, Glenelg, and Port Adelaide sewers, weirs, locks, and other improvements River Murray, State Government buildings and Adelaide cemetery, harbours, jetties, lighthouses, and dredging, ministerial control of Renmark Irrigation Colony and Adelaide Municipal Trust, care of the aborigines.
<b>6. Mines—</b> (a) Department of Mines. (b) Government Geologist.	Mining, Gold Dredging.	All matters arising under Mining Acts, warden's courts, record of assays, geological surveys and reports.
<b>7. Education—</b> (a) Education Department (b) Adelaide University. (c) Adelaide School of Mines. (d) Country Schools of Mines. (e) Public Library, Museum, and Art Gallery. (f) Observatory.	Education, Adelaide University, Degrees in Surgery, University Site, Public Library, Museum and Art Gallery, School of Mines.	Education generally, including primary, secondary, technical, and university, institutes, astronomical (but not meteorological) work.

## SOUTH AUSTRALIA (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
8. Department of Industry—	Conciliation, Factories, Early Closing, Sale of Furniture, Scaffolding, Lifts, Shearers' Accommodation, Steam Boilers and Engine Drivers, Workmen's Compensation Act.	Factories, shops, early closing, industrial disputes, etc.
9. Agriculture and Irrigation— (a) Department of Agriculture. (b) Advisory Board of Agriculture. (c) Agricultural College. (d) Dairy Department. (e) Poultry Department. (f) Horticultural Department. (g) Stock and Brands. (h) Veterinary Department. (i) Produce Department. (j) Irrigation. (k) Experimental Farms.	Wine and Brandy, Fertilisers, Vine, Fruit and Vegetable Protection, Commerce, Hay and Chaff, Insecticides, Phylloxera, Irrigation, Stock Diseases, Brands,	Scientific farming, agricultural colleges and experimental farms, agricultural instruction and general development of agriculture; handling, shipping and cold storage of produce, inspection of stock, registration of stock brands, reclamation and irrigation of land.

## WESTERN AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1912.

1. Colonial Secretary— (a) Accountant. (b) Aborigines. (c) Fisheries. (d) Friendly Societies. (e) Gaols. (f) Government Gardens. (g) Harbour and Light. (h) Immigration, Tourist and General Information. (i) Lunacy. (j) Medical, Public Health and Factories. (k) Observatory. (l) Police. (m) Public Charities, State Children, and Government Labour Bureau. (n) Registry and Statistical. (o) Rottnest Island.	Aborigines, Bread, Bank Holidays, Building Societies, Bunbury Harbour Board, Bills of Lading, Boulder Turf Club, Boat Licensing, Conspiracy and Protection of Property, Co-operative and Friendly Societies, Coasting Vessels, Dentists, District Fire Brigades, Dog, Early Closing, Employment Brokers, Fremantle Harbour Trust, Friendly Societies, Fisheries, Factories, Game, Harbours and Rivers, Hospitals, Health, Industrial Conciliation, Jetties, Bridges, etc., Kalgoorlie Turf Club, Lunacy, Licensing of Boats, Merchant Shipping, Marriage, Marine Stores, Medical, Newspaper Libel, Navigation, Oyster Fisheries, Public Institutions, etc., Lands Improvement, Poor House Discipline, Prisons, Pearl Shell Fisheries, Pearl Dealers' Licensing, Police, Police Benefit Fund, Pharmacy and Poisons, Perth High School, Quarantine, Registration of Births, Deaths and Marriages, Royal Commissioners' Powers, Statistical, State Children, Shark Bay Pearl Shell Fishery, Seamen, Shipping, Trespass, Trades Unions, Truck, Toll from Wharves, etc., University Endowment, Vaccination, Workers' Compensation, Workmen's Wages, W.A. Turf Club.	Consuls, passports, inspection of fisheries, protection of aborigines, actuarial, industrial arbitration, friendly societies, trades unions, prisons, Government gardens, light-houses and signal stations, harbours and rivers, coastal surveys, immigration, tourist and general information, immigration bureau (Fremantle), immigrants' home (Perth), hospitals, hospitals for insane, early closing, sanitation, factories, astronomical, police, poor relief, labour bureau, births, marriages and deaths, statistics, children's courts, old men's home, old women's home, penal settlement, Government cottages, Rottnest Island.
2. Treasury— (a) London Agency. (b) Printing Dept. (c) Savings Bank. (d) Lithography. (e) Stores. (f) Audit. (g) Taxation. (h) Inspection of Liquor.	Loan, Inscribed Stock, Treasury Bills, Auctioneers, Stamp, Wines, Beer and Spirits Sale, Employment Brokers, Gun Licensing, Gov. Savings Bank, Land and Income Tax, Dividend and Totalisator Duties, Workers' Homes.	Finance generally, general stores, taxation generally, audits as provided by special Acts, also under Ministerial authority.

## WESTERN AUSTRALIA (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
<b>3. Attorney-General—</b> (a) Crown Law Offices. (b) Supreme Court. (c) Stipendiary Magistrates. (d) Land Titles Office. (e) Electoral Office. (f) Official Receiver. (g) Curator of Intestates' Estates. (h) Sheriff.	Administration of Justice, Association Incorporation, Bankruptcy, Criminal Code, Compensation for Accidents, Crown Suits, Electoral, Firms' Registration, Foreign Companies, Fugitive Offenders, Justice, Libel, Licensing Laws, Magisterial Districts, Workmen's Wages, Penalties Remission, Quarter Sessions, Supreme Court Acts, Truck Act, Transfer of Land, Workers' Compensation, Intestate Estates.	Criminal and civil law, conveyancing, parliamentary drafting, sheriffs, bankruptcy, intestacy, licensing, petty debts, petty sessions and police courts, land titles and registration of deeds and leases, elections.
<b>4. Public Works—</b> (a) Engineering Division. (b) Architectural Division.	Roads Board, Water Boards, Public Works, Tramways, Electric Light, Drainage, Municipal Corporations.	Public buildings and works generally, metropolitan water-works, Fremantle and Claremont water supply, railway and tramway construction, municipalities.
<b>5. Agricultural—</b> (a) Stock and Brands. (b) Rabbit Branch. (c) Orchard and Insect Pests. (d) Markets & Refrigerating Works. (e) Entomological. (f) Public Abattoirs. (g) Irrigation in Agricultural Areas. (h) Vegetable Pathology and Botany. (i) Dairying. (j) Tropical Agriculture. (k) Experimental Farms. (l) Clearing by Traction Engine. (m) Horticultural. (n) Poultry.	Rabbit, Stock Diseases, Scab, Brands, Insect Pests, Noxious Weeds, Fertilisers and Feeding Stuffs, Contagious Diseases in Bees, Drovers, Abattoirs, Vermin, Veterinary Surgeons.	Agricultural, horticultural, and pastoral pursuits generally, irrigation, abattoirs and refrigerating works.
<b>6. Education—</b> (a) Primary Education. (b) Secondary Education. (c) Training College for Teachers. (d) Technical Education.	Education.	Education generally, including primary, secondary, continuation and technical schools. Inspection of Schools. Training of Teachers.
<b>7. Railway—</b>	Government Railways.	Management, maintenance and control of Govt. Railways.
<b>8. Mines—</b> (a) Explosives and Analytical. (b) Inspection of Machinery. (c) Mining Engineers. (d) Mines Water Supply. (e) Geological Survey. (f) State Batteries.	Mining, Sluicing and Dredging for Gold, Explosives, Inspection of Machinery, Mines Regulation, Coal Mines, Mining Development.	Mining generally, water supply and stock routes on the gold-fields, State batteries and reduction plants.
<b>9. Lands—</b> (a) Lands and Surveys. (b) Woods and Forests.	Land, Roads, Cemeteries, Licensed Surveyors, Bush Fires, Timber Regulations.	All business in connection with holdings under the Lands Acts, reserves, roads, land selection, district survey offices, land agencies.

## TASMANIA.—ADMINISTRATIVE GOVERNMENT, 1912.

<b>1. Premier—</b> (a) Governor's Establishment. (b) Premier's Dept. (c) Executive Council. (d) Agent-General.	...	Correspondence with State, Federal, Colonial, British, and and Foreign Govts., with Agent-General & Governor, despatches from Secretary of State referred by the Governor, matters submitted by other Ministers.
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## TASMANIA (continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
<b>Chief Secretary—</b> (a) Houses of Parliament. (b) Electoral. (c) Audit. (d) Statistical & Registration. (e) Inspection of Machinery. (f) Fisheries. (g) Public Buildings. (h) Charitable Institutions. (i) Boys' Training School. (j) Invalid Depôt. (k) Neglected Children's Department. (l) Medical Institutions. (m) Hospitals. (n) Public Health. (o) Explosives. (p) Public Service Board.	Audit, Bank Holidays, Cemeteries, Coroners, Registration of Births and Deaths, Botanical Gardens, Charitable Institutions, Electoral, Fire Brigades, Fisheries, Hospitals, Inebriates, Museum and Art Gallery, Newspapers, Pensions, Pharmacy, Public Health, Public Service, Vaccination, Wages Boards, Midwifery, Shops Closing.	Charitable institutions, cemeteries, public health, electoral, franchise, fisheries, machinery, statistics, training & industrial schools, public service, explosives, wages boards.
<b>3. Treasury—</b> (a) Taxes. (b) Printing. (c) State Savings Bank. (d) Agricultural Bank. (e) Merchant Ship's Officers Exam. Board.	Suppression of Public Betting, Licensing, Billiard Tables Licensing, Stamp Duties, Auction, Pawnbrokers, Public Debts, Loans to Local Bodies, Land Tax, Taxation, Income Tax, Assessment, Savings Bank, State Advances, Merchant Ships' Officers' Examination.	Finance generally, collection of internal revenue and of stamp duties, Government printing.
<b>4. Mines—</b>	Mining, Mining Companies, Mining Companies (Foreign).	All matters arising under Acts dealing with mining, registration of mining companies.
<b>5. Lands—</b> (a) Lands Branch Office, Launceston. (b) Agricultural and Stock Department.	Crown Lands, Closer Settlement, Game Protection, Stock, Diseased Animals, Contagious Diseases (cattle), Rabbits Destruction, Californian Thistle, Vegetation Diseases, Codlin Moth.	Crown lands and surveys, agriculture and stock.
<b>6. Public Works—</b>	Railway Management, Public Works, Local Government.	Construction and control of public works, including railways.
<b>7. Attorney-General—</b> (a) Supreme Court. (b) Lands Titles. (c) Sheriff. (d) Magistracy. (e) Police.	Probate, Stamp Duties, Foreign Companies, Legal Practitioners, Real Property, Prisons, Bankruptcy, Local Courts, Infant Life Protection, Motor Traffic, Police, Police Regulation.	Courts of law, gaols, justices of the peace and coroners, lands titles, police, registration of deeds, Supreme Court & Judges.
<b>8. Education—</b>	Education.	Primary & technical education, University of Tasmania.

## SECTION XXVI.

## LOCAL GOVERNMENT.

## § 1. Introduction.

1. **Systems of Local Government.**—In all civilised nations, whatever the previous course of their constitutional history, the persistent and rapid growth of the functions of the central Government, with repeated assumptions of new and onerous duties and responsibilities, has rendered some attempts at decentralisation and some form of local government essential. Without such a relief national administration could be carried on with success only with great difficulty, if at all. Experience, ancient and modern alike, has demonstrated that a completely centralised bureaucracy—that is, a body of officials working from a single centre and responsible only to itself—cannot carry on indefinitely the administration of a large country; such a body tends to ignore the varieties of local conditions, to become stereotyped in its ideas and methods, and sooner or later breakdown is inevitable. There are two possible policies which a Legislature may adopt towards local authorities apart from the imposition of compulsory duties upon them. There is first (a) the grant of general power to all local bodies of a particular class—that is, the Legislature may establish a set of authorities and empower them to do anything which in their judgment will tend to promote the satisfactory administration and general well-being of the areas under their control, so long as any particular powers which they propose to use are not expressly prohibited or reserved to other authorities. But as this liberty might easily in some cases be abused, there is necessarily the restriction, of greater or less extent according to the country and the nature of the authorities in question, that the actual exercise of these general powers shall be subject to the approval of an administrative department of the central Government. Or, on the other hand, the Legislature may (b) grant only specific powers to local bodies—that is, may give them permission to do all or any of a number of enumerated things, with or without the approval of the central departments, and in this case nothing further can be done by the local body unless permitted by fresh legislative enactments. In a general way it may be said that legislation on the continent of Europe has ordinarily followed the first of these two methods, and has given to the local self-governing communities power to do anything for which they can get administrative approval; while in the Commonwealth, as well as in Great Britain and in the United States, the practice has been the opposite one—local authorities are empowered to do only specified things; but in order, in spite of this, to allow free play to local initiative and enterprise, parliamentary procedure permits of local authorities being able to obtain additional powers for particular works or undertakings by means of special Acts. This difference between the Australian or British and continental systems has two important results.

(i.) *Difference between Australian and Continental Systems.* (a) The first important result of this difference is that in Australia, England and the United States the enterprise and activity of local authorities depend upon the temper and ideas of Parliament—that is to say, upon the elected representatives of the nation; whilst throughout a large part of the continent of Europe the controlling influence is ordinarily exercised by a bureaucracy whose opinions upon the matters in question may or may not be coincident with that of the majority of the electorate. The result is that in Australia it is the

business of the State Parliaments to determine what powers are to be conferred upon local authorities, while, ordinarily, under the continental system, the administrative bodies have to regulate what the local authorities may or may not do. The efficiency of such continental systems depends almost entirely upon the character of the controlling bureaucracy, although it is true that the legal powers of a municipality under that system might be very much wider than those of a municipal council in Australia. If the bureaucracy is enterprising and ready to encourage and aid in every way the growth of local action and experiment—as it is in Prussia—then there is the largest scope for municipal development; but if, as in France, the bureaucracy is conservative in its ideas and slow to move, the action of local authorities remains cramped and limited.

(b) The second important result of the difference between the Australian and continental systems is that in all matters entrusted to them local authorities in Australia consider that their duty is to carry out the law according to the will of, and in the manner desired by, the ratepayers of their local areas, subject generally to the supervision of the central Government, whereas, on the continent of Europe local authorities regard themselves normally as bodies appointed to carry out, within their respective localities, the will of the central Government, even in such matters as are of purely local importance. Local authorities under the continental systems are responsible to the central Government and are subject to administrative control, whilst in Australia municipal councils, so long as they do not infringe the Acts under which they are constituted, or which they have to administer, are responsible only to the ratepayers of their respective localities.

(ii.) *Various Systems in the Several States of the Commonwealth.* In all the States of the Commonwealth, Acts have now been passed providing for comprehensive schemes for the decentralisation of power by the constitution of various forms of local authorities to deal with a large variety of subjects and matters. The general policy of the Legislatures towards local authorities in Australia has already been pointed out. Generally speaking, these authorities exercise their powers under enactments of two kinds.

(a) There are, first, what may be called constituent Acts, which create the various classes of local bodies and arm them with the powers necessary for the fulfilment of the duties intended to be discharged by them, and there are, secondly (b) general Acts dealing with one subject or group of subjects, of administration—such as the Public Health Acts—giving power to the local authorities for that particular service. Although the Acts controlling local government in the several States vary considerably in detail, especially as regards the election of councillors and presiding officers, method of valuation, and rating powers, there is a great similarity between the general powers and duties conferred and imposed upon local authorities in the various States; these powers and consequent duties being many and varied. As a rule the municipal council is the highway authority, being responsible for all the roads within its area and the upkeep of all bridges; it is a public health authority; it supervises the sanitary work, the water supply and the lighting of its area, and for these and for other purposes may appoint officers; it administers the Acts relating to the sale of foods and drugs, the slaughter and diseases of animals, weights and measures, and river pollution; it may establish hospitals, public recreation grounds, libraries, and museums, and also provide asylums and support charitable institutions; it may make provision for preventing fires and floods; it administers the municipal property, makes by-laws with regard to a large variety of things and matters, and may acquire other powers by petition to the Governor. The councils are elected by the ratepayers and seek only to carry out the wishes of the electorate, subject to the general supervision of the central Government.

(iii.) *Systems on the Continent of Europe.* On the continent of Europe a careful distinction is generally drawn between those internal affairs in which the central Government is thought to be directly concerned and those which are held to be primarily of only local interest. In Prussia, for instance, the former includes, besides the army,

State taxes and domains, ecclesiastical affairs, police, and the general supervision of local authorities, while to the localities are left roads, poor relief, and a number of miscellaneous matters. The work of the central Government is deconcentrated, that is to say, the country is divided into districts, in each of which there is a delegation of the central authority, doing its work and thereby decreasing the pressure upon the head offices. The executive agents in each locality are elected by the inhabitants, but they are also the representatives of the central Government, and as such they are members of the bureaucracy and are under its control, with the consequence that they look to the central Government for guidance and direction in regard to local affairs. Local government is in fact weak; it is not so much the exercise of the will of a locality by the central power, as the exercise of the will of the latter by the locality. The system of deconcentrated centralised control as carried out in Prussia has, however, some distinct advantages.

- (a) In the first place the duties of supervising the actions of a large number of local authorities do not rest only upon a comparatively small number of officials at the seat of Government, but are carried out by delegations in all parts of the country, which are able to acquire a more intimate knowledge of local requirements and conditions.
- (b) Secondly, the supervision is not only by Government officials, but by responsible and experienced persons elected by the inhabitants and who command local confidence. The general results are that, firstly, the staff at the central offices is relieved of much detailed work, and, secondly, that the control of the localities is rendered much less bureaucratic.

**2. Early History of Local Government in Australia.**—Before the more comprehensive systems of self-government were first provided for in the several States, various enactments had from time to time been passed and amended in order to satisfy the growing demand for local government which asserted itself as one of the primary results of the spread of education and increase of population. In the latter part of the year 1839 the first municipal law was passed in South Australia, which was thus the birth-place of local government in the Commonwealth. On 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council. In 1842 the Sydney City Incorporation Act was passed by the New South Wales Government; under this Act the city was divided into six wards, and resident occupiers or owners of houses, warehouses, or shops within a radius of seven miles were duly enrolled as citizens and entitled to vote at the election of councillors, the number of which was fixed at twenty-four. A city fund was established and rates levied. The duties of the council were to construct and maintain streets, sewers, and waterworks, to light the streets, and to make by-laws for the general good rule and government of the city. In the same year, 1842, Melbourne was incorporated as a town by special Act, and as a city in 1847, while Geelong was incorporated in 1849. The Acts by which Sydney and Melbourne were incorporated contained no provision for the extension of the municipal principle to other localities, but in 1842 an Imperial Act was passed under which the Governor of New South Wales was empowered to incorporate by Letters Patent every county or any part of a county to form districts for the purpose of local government. In the following year the districts of Appin, Campbelltown, Camden, Narellan, and Picton, in New South Wales, were incorporated under one county district council, while later in the same year Appin and Campbelltown were constituted as a separate district under the control of six councillors. In 1844 the Sydney City Incorporation Act was amended; by this time the number of county district councils had increased to eight, and these, in conjunction with the municipal council of Sydney and the Road Trusts, which were generally created by special Acts, constituted the whole of the local government system in New South Wales prior to 1858. The Imperial Act of 1850, under which the State of Victoria was granted responsible government, provided for the division of the State into districts under the government of local councils. In all the States of the Commonwealth, systems of local government have been provided for ;

in some of the States, such as Victoria, practically the whole area of the State has for some years been divided into districts for the purposes of self-government, while in others, more especially in New South Wales, a general system of extending the advantages of local government throughout the more settled parts of the country has only recently been provided. In other States systems of local government which have been in force for some years have, as is only to be expected, made comparatively slow progress owing to the small population scattered over such large areas. Taking, however, into consideration the benefits which must accrue, especially in a country of great distances, from the establishment of suitable systems of local government, and judging by the success of similar institutions in other countries, there is every reason to expect that, as population increases and settlement progresses, the people of Australia will take fuller advantage of the systems provided.

## § 2. New South Wales.

1. **Development of Local Government Systems.**—In the year 1858 the Municipalities Act, the first important measure with regard to general local government in New South Wales, was passed. Under this Act provision was made for the incorporation of any town or rural district as a municipality upon presentation to the Governor of a petition signed by at least fifty of the respective ratepayers, and containing a larger number of signatures than those attached to any counter petition. The members of the council were elected by the ratepayers, and the chairman was chosen by the councillors from their own number. The duties of the council were to abate and remove nuisances; to make by-laws for the regulation of their own proceedings and for the general good government of the town; to control all roads, bridges, ferries, and wharves; to establish hospitals, asylums, libraries, and gardens; and to establish tolls and rents for the use of markets, bridges, wharves, and jetties within and belonging to the municipality. The general rate was not to exceed one shilling in the pound, but a special rate for water supply, sewerage, and street lighting could be levied. Government endowment was provided for, by way of subsidies on the amount collected from rates, over a period of fifteen years. In all thirty-five districts were incorporated under this Act, and these districts, with the exception of Cook, which was united to Camperdown (now part of the City of Sydney) in 1870, and East St. Leonards, subsequently joined to St. Leonards, still exist, though the boundaries of most of them have since been changed.

(i.) *The Municipalities Act 1867.* The Act of 1858 was repealed in 1867 by the Municipalities Act of that year. Under the provisions of the latter Act the thirty-five existing municipalities were to continue their existence under the designation of boroughs, and all municipalities created in the future were to be classified either as (a) boroughs, or (b) municipal districts.

(a) *Boroughs* could consist of any city, town, or suburb of the metropolis, or of any populous country district, but every borough had to have a population of not less than 1000, and was limited to an area of nine square miles, of which no part was more than six miles distant from any other part.

(b) *Municipal Districts* could comprise any part of the colony not containing a borough, but had to include an area of not more than fifty square miles, with a population of not less than 500 souls.

The duties and powers of the councils were extended and defined, while the maximum rate remained as before. This Act still left it optional for any district to become constituted as a municipality, with the consequence that only a small proportion of the State was incorporated under its provisions.

(ii.) *Division of the State into Shires, 1905.* The Act of 1867 was amended from time to time during the succeeding thirty years until the whole of the Acts—sixteen in number—were repealed by the consolidating Act of 1897. This Act did not alter the

chief features of previous Acts, and still retained the voluntary principle of incorporation, which was not conducive to the adoption of a general system of local government, because so long as the central Government continued to construct and pay for local works, it was natural that the inhabitants benefited would be willing to deny themselves the advantages of self-government. The law on the subject remained in an admittedly unsatisfactory condition for several years, and, though various measures were introduced into Parliament for its amendment, it was not until the year 1905, when the Shires Act was passed, that a comprehensive scheme of local government was extended to the greater part of the State.

- (a) *The Shires Act 1905* divided the whole State, with the exception of existing municipalities, the Western Division, Lord Howe Island, the islands in Port Jackson, and the Quarantine Station of Port Jackson, into shires, which were themselves subdivided into ridings, each riding having equal representation in the council. An important feature of the Act was that the rates were to be charged on the unimproved value of the land instead of on the annual rental; the rate to be levied was not to be less than one penny, nor more than twopence in the pound, and the minimum rate in respect of any portion of land was fixed at two shillings and sixpence. Another important provision of the Act was that as soon as a rate was imposed by a council, the operation of the Land Tax Act was suspended. The councils were vested with wide general powers and could acquire additional powers by resolution of a majority of the council followed by an application by the President on behalf of the council to the Governor.
- (b) *The Local Government Extension Act 1906* amended and consolidated the law relating to municipalities and extended the principles of the Shires Act to municipalities. Provision was also made whereby the Governor was authorised to proclaim as a city any municipality which had, during the five years preceding such proclamation an average population of at least 20,000 persons and an average revenue of at least £20,000, and which formed an independent centre of population.
- (c) *The Local Government Act 1906*. Towards the close of the year 1906 the Local Government Act, which deals comprehensively with both shires and municipalities, was passed; by this Act (which was amended in 1908), both the Shires Act 1905 and the Local Government Extension Act 1906 were repealed, and their provisions amended and consolidated.
- (d) *The Local Government (Loans) Act 1907*. In 1907 the Local Government (Loans) Act was passed in order to overcome certain difficulties at the inception of the new system, authorising the Governor to approve of municipal loans in special cases, without going through the procedure required by the Local Government Act.
- (e) *The Local Government (Amending) Act 1908*. This Act was passed in December, 1908, and contains important amendments, more especially in regard to the constitution of areas, functions of councils, values and valuations, and rates.

**2. Local Government Systems now in Operation.**—The law relating to local government in New South Wales is now contained in the Acts of 1906, 1907, and 1908 referred to above. Practically the whole of the State, with the exception of the Western Division, has now been brought under the operation of these Acts.

(i.) *Areas Incorporated*. Prior to the year 1907 the total area incorporated formed a very small part of the whole area of the State, as may be seen in the following statement:—

## AREAS INCORPORATED IN NEW SOUTH WALES, 1860 to 1906.

Year	...	...	1860.	1870.	1880.	1890.	1900.	1906.
Area incorporated—sq. miles	...	...	409	649	1,482	2,387	2,763	2,830

*Total area of State (exclusive of Lord Howe Island), 310,367 square miles.*

The areas incorporated in 1906 in each of the three territorial divisions of the State were as follows:—

## DISTRIBUTION OF INCORPORATED AREAS, 1906.

Division.			Incorporated Area.	Unincorporated Area.	Total Area.
Eastern	...	Sq. miles	1,977	93,742	95,719
Central	...	"	571	88,579	89,150
Western	...	"	282	125,216	125,498
Total	...	...	2,830	307,537	*310,367

\* Total area of State, exclusive of Lord Howe Island, the area of which is 5 square miles.

The total area incorporated under the Local Government Act 1906, to the end of the year 1910, was 185,108 square miles, of which 182,111 square miles were comprised within shires and 2997 within municipalities. The areas incorporated comprise the whole of the eastern and central divisions of the State, with the exception of Lord Howe Island, the islands in Port Jackson, and the quarantine station at Port Jackson.

(ii.) *General.* The above Act came into operation on the 1st January, 1907; it provided for the continuation of existing shires and municipalities, for the creation of new ones, and for their reconstitution by uniting, dividing, altering, or converting areas. Each shire is divided into three ridings, and each municipality may be divided into wards by petition of the council or a majority of the ratepayers to the Governor. The councils consist, in the case of shires, of either six or nine councillors, and in the case of municipalities, of from six to twelve aldermen, except in the case of the union of two or more municipalities, when the Governor may determine that the council of the united areas shall consist of any number from twelve to eighteen aldermen. All occupiers of rateable property of a yearly value of a least £5 who have been in occupation for at least three months, of either sex, who are either natural-born or naturalised British subjects, of the age of twenty-one years and upwards, are entitled to be registered on the electors' roll, and any male person so enrolled is qualified to be elected as a councillor or alderman, unless he is otherwise ineligible.

(iii.) *Functions of Councils.* The general scheme of the Act was that councils, on their constitution, should start with a limited number of powers of a primary nature, and that, as their needs develop, they should from time to time acquire additional powers on following the prescribed procedure. On the constitution of a shire or municipality the councils may exercise any of the following powers:—The construction and maintenance of all public places, except those vested in the Railway Commissioners or other public bodies or trustees, and national works; lighting of, and controlling the traffic in streets and roads; prevention of fires and floods; the administration of the Public Watering Places Act 1900 and the Impounding Act 1898, and certain parts of the Police Offences Act 1901, the Public Health Act 1902, and the Cattle Slaughtering and Diseased Animals and Meat Act 1902. Other powers and duties, such as the construction of drainage and water supply systems without reticulation, the care and management of parks and commons, and the licensing of hawkers and public vehicles, are conferred and imposed upon municipal councils, while these same powers and duties may be acquired by shire councils by resolution of the council followed by application to the Governor.

(a) *Acquisition of Further Powers.* Further powers may also be acquired either by shires or by municipalities if the council decide that they are necessary for the good government of the locality; these are the administration of the Public Gates Act 1901, and the Native Dog Destruction Act 1901; water supply by reticulation; the maintenance of passenger ferries, of fire brigades, of municipal buildings, of cattle-yards and abattoirs, of markets, parks, and recreation grounds, of refuse destructors, of cemeteries and public baths; the manufacture and supply of gas, electricity, and hydraulic or other power; the regulation and control of theatres, public halls, and lodging houses; the establishment and management of public libraries, art galleries, museums, and public bands; the regulation and supervision of buildings and balconies; of the sale of fish and meat, and the suppression of nuisances caused by the emission of smoke or vapour. These powers may be acquired by a resolution passed by an absolute majority of the council followed by an application in the prescribed form to the Governor. On receipt of a petition signed by not less than fifty, or if there be less than 300 ratepayers on the roll, by one-sixth of the ratepayers, the Governor may direct that a poll be taken as to whether all or any of the powers applied for shall be conferred on the council.

(b) *Appointment of Executive Officers.* Provision is made in the Act for the appointment of officers and servants, such as shire engineers, municipal clerks, and sanitary inspectors, and also for the acquisition by councils of land or buildings either by agreement or compulsorily, for which purpose the provisions of the Public Works Act 1900 are incorporated.

(iv.) *Rates and Ratable Property.* All land is ratable except the following:—Commons, public parks, and public reserves not held under lease or license; cemeteries, public hospitals, benevolent institutions, and buildings used exclusively for public charitable purposes; churches and free public libraries; unoccupied Crown lands, lands vested in the University of Sydney occupied and used solely for the purposes of education; and vested in the Chief Commissioner for Railways and Tramways and actually used for the purposes of the Government railway or tramways. Rates levied by a council may be of four kinds, namely, general, special, local, or loan rates.

(a) *General Rates* are levied on the unimproved value at a rate of not less than one penny nor more than twopence per pound, but if the minimum rate be more than sufficient to meet the requirements of the council, it may be further reduced at the discretion of the Governor. A council of a municipality which has levied a general rate of not less than one penny on the unimproved value may impose such additional rate as may be required either on the improved or the unimproved value; the total amount to be derived from the general rate and the additional rates taken together must not, however, exceed the amount yielded by a rate of twopence in the pound on the unimproved value and two shillings in the pound on the assessed annual value of all ratable land.

(b) *Special, Local, and Loan Rates* may also be imposed either on the improved or the unimproved value at the option of the council, but in the case of special and local rates a poll may be demanded by the ratepayers as to whether the rate shall be imposed or not. Rates on the unimproved value of land may also be levied for the purposes of the Country Towns Water Supply and Sewerage Acts 1880-1905, which provided for the construction by the Government of waterworks and sewerage systems in municipalities which are outside the areas served by the Metropolitan and Hunter River Boards. The cost becomes a charge against the municipality, carrying interest at the rate of 4 per cent., and payable by annual instalments over a period of not more than 100 years.



Particulars of rates levied are given in paragraphs 3 and 4 hereinafter.

(v.) *Endowment.* Government endowments to shires are fixed every third year and the amount is determined according to the extent of the shire, the probable revenue from a rate of 1d. in the £, the necessary expenditure, the extent of roads and other public works to be constructed and maintained, and other matters. The endowment in any year is paid on the basis of the amount of general rates collected in the preceding year. At the end of 1909 the endowments to be paid during the triennium 1910-12 were fixed. The classification for the period mentioned is as follows :—

#### NEW SOUTH WALES.—ENDOWMENT OF SHIRES, CLASSIFICATION, 1910-12.

Class.	1st.	1st.	2nd.	3rd.	4th.	5th.	6th.
No. of Shires ... ..	27	41	10	9	7	14	26
Endowment received in the £ on general rate ... .. Up to	*	10s.	15s.	20s.	25s.	30s.	†

\* No endowment. † Not less than 40s. in the £ on the general rate.

It is also provided that all municipalities not receiving statutory endowment under any Act repealed by the Act of 1906 shall, upon the result of investigations made into their administration and financial necessities, be entitled to a sum not exceeding three shillings and fourpence in the pound on the general rate collected; but if the revenues are sufficient to meet the reasonable requirements of the corporation under proper management no endowment will be paid.

(vi.) *Borrowing Powers and other Provisions.* A council of a municipality is authorised to borrow up to 10 per cent. of the unimproved capital value, and all money so borrowed is a charge upon the revenue of the council. If a council desire that any proposed loan should be guaranteed by the Government application must be made to the Treasurer, who may either refuse or recommend the guarantee. Both shires and municipalities may temporarily borrow in any year an amount not exceeding one-third of the estimated revenue to be received from rates if the consent of the Minister shall have been first obtained. Auditors are appointed by the councils, and Government examiners are appointed to inspect the accounts of the councils. A defaulting area is defined to be an area in which a sufficient number of councillors have not been elected to form a quorum, or in which the requirements of the Act as to the levying of a general rate have not been carried out, or in which the council has ceased for six months to exercise its functions. The Governor is authorised to appoint an administrator for a defaulting area.

3. *Shires, 1910.*—The total area of the 134 shires constituted under the new system is 182,111 square miles, and the population at the census of 1911 was 595,517.

The shires vary in area from 36 square miles in the case of Ku-ring-gai, immediately north of the metropolis, to 5745 square miles in the case of Lachlan in the Condobolin district.

(i.) *Valuation and Rates Levied.* The unimproved capital value of the shires in 1910 was £89,935,912, as against £83,464,446 in the preceding year. It is not possible to give the improved capital value or the assessed annual value, as the shires are not compelled to make these valuations, and in many cases do not make them. The total amount of all rates levied was £423,477.

(ii.) *Revenue.* The principal heads of revenue for the four years since the new Act came into force are shewn in the following table :—

## NEW SOUTH WALES.—INCOME OF SHIRES, 1907 to 1910.

Particulars.	1907.	1908.	1909.	1910.
<i>General Fund—</i>	£	£	£	£
General rates ... ..	287,635	382,336	374,540	421,596
Government endowment ... ..	235,794	162,859	261,029	277,731
Public works ... ..	3,064	65,781	57,017	59,527
Health administration ... ..	2,376	2,979	3,033	3,746
Public services ... ..	4,593	7,038	6,691	7,441
Shire property ... ..	...	517	1,721	4,229
Miscellaneous ... ..	2,197	4,198	5,651	5,008
<i>Special and Local Funds</i> ... ..	...	1,160	7,462	15,095
Total revenue ... ..	535,659	626,868	717,144	794,373

(iii.) *Expenditure.* The following statement shows the expenditure of shires during the years 1907 to 1910 inclusive:—

## NEW SOUTH WALES.—EXPENDITURE OF SHIRES, 1907 to 1910.

Particulars.	1907.	1908.	1909.	1910.
<i>General Fund—</i>	£	£	£	£
Administrative expenses ... ..	100,435	116,932	117,696	125,669
Public works ... ..	249,868	516,072	529,954	599,945
Health administration ... ..	1,536	4,604	4,573	4,840
Public services ... ..	3,870	11,702	10,290	13,012
Shire property ... ..	18,853	397	1,911	4,561
Miscellaneous ... ..	11,043	6,453	5,886	5,129
<i>Special and Local Funds</i> ... ..	...	58	6,474	11,976
Total expenditure ... ..	385,605	656,218	676,784	765,192

(iv.) *Assets and Liabilities.* The financial position of the shires at the end of the year 1910 was strong, as there was an excess of assets of £262,938. The following table gives particulars of assets and liabilities as at the 31st December, 1910:—

## NEW SOUTH WALES.—ASSETS AND LIABILITIES OF SHIRES, 1910.

Assets.			Liabilities.		
<i>General Fund—</i>			<i>General Fund—</i>		
Outstanding rates ... ..	£27,726		Temporary loans ... ..	£11,147	
Stores and materials ... ..	9,129		Sundry creditors ... ..	24,449	
Bank balance ... ..	130,671		Due on contracts ... ..	971	
Sundry debtors ... ..	9,056		Due to trust fund ... ..	48	
Land ... ..	7,929		Other ... ..	20	
Buildings ... ..	28,323		<i>Special and Local Funds</i> ... ..	8,135	
Plant and property ... ..	68,823				
Furniture ... ..	12,971		Total ... ..	44,770	
Other ... ..	172		Excess of assets ... ..	262,938	
<i>Special and Local Funds</i> ... ..	12,908				
Total ... ..	307,708		Total ... ..	307,708	

4. **Municipalities.**—Including the City of Sydney there are 190 municipalities in New South Wales; of these forty are in the suburbs of Sydney and twelve in the district of Newcastle and suburbs. Since the 1st January, 1908, under the Local Government Act 1906, municipalities must levy a general rate on the unimproved capital value of all ratable land, and may levy additional general, special, local, or loan rates on either the unimproved or improved capital value. Municipal rates are therefore no longer charged on the annual value; the only rates based on that value are those charged by the Metropolitan and Hunter River Water Supply and Sewerage Boards.

(i.) *Capital Value, Area, Population, and Rates Levied, 1902 to 1910.* The following table shows the improved capital value, the area, population, number of buildings, and amount of rates levied in municipalities for each year from 1902 to 1910 inclusive:—

**NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED CAPITAL VALUE AREA, POPULATION, NUMBER OF BUILDINGS, AND TOTAL RATES LEVIED, 1902 to 1910.**

Year ended February.*	Sydney and Suburbs.					Country.				
	Improved Capital Value.	Area.	Population.	Number of Dwellings.	Total Rates Levied.	Improved Capital Value.	Area.	Population.	Number of Dwellings.	Total Rates Levied.
	£	Acres.	No.	No.	£	£	Acres.	No.	No.	£
1902 ...	90,060,600	†	†487,900	†94,907	333,065	37,936,300	1,711,312	†372,218	74,012	131,570
1903 ...	93,413,300	†	516,180	99,125	377,016	36,606,500	1,711,312	379,430	79,141	174,900
1904 ...	96,171,600	†	514,750	102,061	382,509	38,046,700	1,719,612	386,610	79,712	178,249
1905 ...	98,857,900	†	512,500	105,336	396,268	38,355,800	1,719,612	391,370	81,506	188,929
1906 ...	101,090,900	†	523,530	107,922	404,332	39,223,700	1,719,692	396,820	83,075	191,480
1907 ...	102,037,900	†	550,760	110,430	412,093	39,417,000	1,719,692	401,140	84,094	194,754
1908 ...	103,328,200	95,259	577,180	117,955	426,792	41,668,300	1,824,638	433,470	83,511	208,631
1908 ...	105,641,359	95,259	592,100	120,655	527,926	44,659,776	1,822,821	444,800	84,150	286,329
1909 ...	108,120,427	95,319	605,900	123,860	631,589	44,716,888	1,822,821	456,280	85,341	299,306
1910 ...	111,318,074	95,259	†629,503	†	647,762	45,824,999	1,822,821	†421,714	†	310,849

\* Prior to 1908 the municipal year ended on the first Monday in February, since when the municipal year closes on 31st December. † Census, March, 1901. ‡ Not available. § Figures for last Census.

The following table gives a comparison of the unimproved and improved values for the years 1907 to 1910 inclusive:—

**NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED AND UNIMPROVED CAPITAL VALUES, 1907 to 1910.**

Year.	Sydney.	Suburbs.	Metropolis.	Country.	Total.
UNIMPROVED VALUE.					
1907 ...	£ 20,207,812	£ 19,583,598	£ 39,791,410	£ 14,875,612	£ 54,667,022.
1908 ...	20,207,812	23,799,856	44,007,668	20,104,983	64,112,651
1909 ...	19,970,365	23,486,535	43,456,900	19,798,286	63,255,186.
1910 ...	19,952,793	23,823,398	43,776,191	19,753,131	63,529,322
IMPROVED VALUE.					
1907 ...	45,749,800	57,578,400	103,328,200	41,668,300	144,996,500
1908 ...	49,060,600	56,441,828	105,502,428	44,784,238	150,286,666
1909 ...	50,948,240	57,172,187	108,120,427	44,716,888	152,837,315
1910 ...	52,142,200	59,175,874	111,318,074	45,824,999	157,143,073

(ii.) *Revenue.* The Local Government Act 1906 prescribed that there should be a general fund in each local government area (municipality and shire), and also special funds for specified purposes. The regulations under the Act prescribed the system of accounts to be kept. This system differs materially from the old "cash" system of receipts (cash actually received) and disbursements (cash actually expended).

Prior to 1908 the municipal year ended on the first Monday in February; now it ends on the 31st December. In all statements of municipal accounts for the year 1908, therefore, the period referred to is from the 4th February to the 31st December, except in the City of Sydney, which does not come under the provisions of the Act of 1906 and where the accounts are kept for the calendar year. The first complete year for which financial particulars are available for the municipalities is the year 1909, and details for that year will be found in our previous issue. Particulars of revenue for the year 1910 are given in the following table:—

#### NEW SOUTH WALES.—MUNICIPALITIES, REVENUE, 1910.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund ... ..	578,116†	419,063	320,003	739,066†
Trading accounts ... ..		6,565	85,252	91,817†
Special and local funds ... ..		26,261	170,354	196,615†
Loan funds ... ..		48,489	47,909	96,398†
Gross revenue ... ..	578,116†	500,378	623,518	1,702,012
Deduct transfers* ... ..	...	47,061	47,599	94,660
Net revenue ... ..	578,116†	453,317	575,919	1,607,352

\* Transfers from various funds to loan funds for principal, interest, and capital expenditure. † The city of Sydney accounts are kept on a cash basis, i.e., they shew actual receipts and disbursements; the accounts of municipalities operating under the Local Government Act shew total revenue and expenditure for the year. Items of receipts and disbursements for the city of Sydney cannot be allocated to the different headings shewn for municipalities. † Exclusive of Sydney.

(iii.) *Expenditure.* Reference has already been made to the system of accounts prescribed by the Local Government Act 1906 (see paragraph ii. hereof). The following table gives particulars of expenditure of municipalities for the year 1910:—

#### NEW SOUTH WALES.—MUNICIPALITIES, EXPENDITURE, 1910.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund ... ..	578,985†	425,185	322,518	747,703†
Trading accounts ... ..		7,894	84,552	92,446†
Special and local funds ... ..		31,057	163,207	194,264†
Loan funds ... ..		38,792	42,883	81,675†
Gross expenditure ... ..	578,985†	502,928	613,160	1,695,073
Deduct transfers* ... ..	...	47,061	47,599	94,660
Net expenditure ... ..	578,985†	455,867	565,561	1,600,413

\* Transfers from various funds for principal and interest on loans. † See note † to preceding table. ‡ See note ‡ to preceding table.

(iv.) *Assets and Liabilities.* The financial position of the municipalities as at the 31st December, 1910, is shewn by the following statement of assets and liabilities of the various funds :—

**NEW SOUTH WALES.—MUNICIPALITIES, ASSETS AND LIABILITIES, 1910.**

Particulars.	Sydney.	Suburbs.	Country.	Total.
<i>Assets—</i>	£	£	£	£
General fund ... ..	4,318,028†	230,689	404,260	634,949†
Trading accounts ... ..		1,764	58,302	60,066†
Special and local funds...		14,303	1,086,078	1,100,381†
Loan funds ... ..		165,224	437,007	602,231†
<b>Total ... ..</b>	<b>4,318,028†</b>	<b>411,980</b>	<b>1,985,647</b>	<b>6,715,655</b>
<i>Liabilities—</i>				
General fund ... ..	3,794,063†	54,047	51,611	105,658†
Trading accounts ... ..		3,325	25,639	28,964†
Special and local funds...		9,893	1,021,291	1,031,184†
Loan funds ... ..		780,397	616,376	1,396,773†
<b>Total ... ..</b>	<b>3,794,063†</b>	<b>847,662</b>	<b>1,714,917</b>	<b>6,356,642</b>

† See note † to first table on preceding page. ‡ See note ‡ to first table on preceding page.

**5. Sydney Metropolitan Board of Water Supply and Sewerage.**—Prior to the year 1888 the main water supply and sewerage systems of Sydney and suburbs were under the control of the City Corporation, while several of the suburban councils had constructed local systems. For some years, however, it had been recognised that owing to the great increase in the population and size of the metropolitan area the water supply was inadequate and the sewerage system antiquated and inefficient. In 1867 a Royal Commission was appointed to enquire into and report upon various schemes for supplying water to the city and suburbs, and in 1869 a report was sent in recommending the adoption of what is known as the "Upper Nepean Scheme." Another commission was appointed in 1875 to investigate different proposed sewerage systems, and two years later a report was presented containing certain recommendations which form the basis of the present system. After considerable discussion and further investigation an Act was passed in 1880 authorising the schemes recommended by the two commissions being carried out. In the year 1888 the works had so far progressed that the Government, with the object of placing the administration of both water supply and sewerage systems throughout the county of Cumberland under the control of an independent body, passed an Act authorising the establishment of the Metropolitan Board of Water Supply and Sewerage. This Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities in the county of Cumberland. The Board is under the general supervision of the Minister for Works—a provision considered necessary since the loan expenditure of the Board forms part of the public debt of the State.

**6. Metropolitan Water Supply.**—In the year 1850 authority was given by the Legislative Council to the City Corporation to construct water and sewerage works. Under this authority a water supply scheme was adopted and carried out, at a cost of nearly £1,750,000, by which the waters of the streams draining into Botany Bay were intercepted and pumped into three reservoirs. This system has now been superseded by the "Upper

Nepean Scheme" referred to above, the management of which was transferred to the Metropolitan Board of Water Supply and Sewerage in May, 1888.

(i.) *The Cataract and Prospect Dams.* A work of great importance and magnitude in connection with the Sydney water supply—the Cataract Dam—was completed in 1908. Prior to the construction of this dam, the system had been weak in the matter of storage, the only reservoir of any importance being that at Prospect, which was formed by the construction of an earthen dam completed in 1890, and which contains a supply available by gravitation of 5,527,000,000 gallons of water. The Prospect reservoir was supplied from the unstored waters of the Nepean, Cataract, and Cordeaux rivers by means of tunnels and conduits capable of carrying 150,000,000 gallons a day; the combined catchment area of the three rivers extends to an area of 354 square miles, and is favourably situated with regard to the coastal rainfall. The whole of this area has been acquired by the Crown, and every precaution is exercised to guard against pollution of the supply. It was found, however, in 1902—almost the driest year on record—that the Prospect reservoir was insufficient for the needs of the increasing population of Sydney and suburbs during a dry period. The Government, therefore, decided to construct additional reservoirs on the rivers forming the sources of supply, in which would be stored as much of the flood water from the available catchment area of 354 square miles as would be necessary to meet the constantly increasing requirements of the metropolis.

The first of this series of reservoirs is the Cataract dam, of which the catchment area above the impounding dam is about fifty square miles. The water released from this reservoir flows down the bed of the Cataract River to a diversion weir at Broughton's Pass, where it enters the previously existing tunnel, and is conveyed thence by a system of open canals to the Prospect reservoir. In traversing the steep and rocky bed of Cataract River the water is thoroughly aerated. The total distance travelled by the water from Cataract to Sydney *via* Prospect is 66½ miles, of which 21½ miles represent the distance from Prospect to Sydney.

The principal dimensions of the Cataract and Prospect dams are given below:—

#### SYDNEY WATER SUPPLY.—CATARACT AND PROSPECT DAMS.

Dam.	Height above Foundation.	Width at Top.	Thickness at Bottom.	Length.	Area of Reservoir.	Capacity of Reservoir.
	Feet.	Feet.	Feet.	Feet.	Acres.	Gallons.
Cataract ...	192	16½	150	811	2,104	20,743,200,000
Prospect ...	85½	30	523	7,300	1,266½	11,029,200,000*

\* Of which 5,527,000,000 gallons are available by gravitation.

The present population of Sydney and suburbs supplied with water from these works is estimated at 696,185. The winter consumption of water ranges from twenty-five to twenty-seven million gallons a day, while the summer consumption and evaporation together approximate to thirty-six million gallons a day. As the combined available capacity of the Cataract and Prospect reservoirs without pumping amounts to about 26,000,000,000 gallons, the storage available represents a supply for about 840 days without rainfall.

(ii.) *Aqueducts and Mains.* The water is drawn off from the Prospect reservoir through a valve tower by cast-iron pipes and thence proceeds by canal, five miles in length, to the Pipe Head Basin, situated 16½ miles from Sydney. It is then conveyed for a further distance of five miles by two wrought-iron pipes, each six feet in diameter to Potts' Hill reservoir, which has a capacity of 100,000,000 gallons, covers twenty-four and a half acres, and is designed to tide the city over any interruption of supply from Prospect, and to prevent fluctuation of pressure. A by-pass is laid along the floor of the reservoir to enable both six-foot mains to deliver water to Sydney direct. At Potts' Hill the water passes through a screening tank constructed of copper-gauze screens, and thence proceeds towards the city in two 48-inch cast-iron mains. The first laid main is

48-inch as far as Pet rsham, whence it bifurcates, one branch (48-inch) leading to Peter-sham reservoir, the other (42-inch) to Crown Street reservoir, where the main pumping station is situated. The duplicate 48-inch main, completed in 1893, continues of the same diameter direct to Crown Street. The main pumping plant situated at Crown Street reservoir consists of three pairs of compound high-duty pumping engines and one electrically-driven centrifugal pumping unit. The first set is capable of raising 500,000 gallons per hour to the Centennial Park reservoir, a height of 104 feet above the pumps, at which place a new covered reservoir, of a capacity of 18,500,000 gallons, has been constructed for the purpose of ensuring a larger bulk of water within the city limits; the second set is capable of raising 210,000 gallons per hour to the Woollahra reservoir, a height of 140 feet, and also of raising 200,000 gallons per hour to Waverley, a height of 220 feet above the pumps; while the third set is capable of raising 100,000 gallons per hour to the Waverley tanks. The centrifugal plant raises 2400 and 4650 gallons per minute to Waverley and Woollahra respectively.

(iii.) *Northern Sydney.* A pumping station at Ryde has been erected for the supply of the suburbs on the north side of the harbour. The station receives its supply through a 32-inch steel main from the Pipe Head Basin, discharging into a reservoir, from which the water is pumped to a 1,000,000-gallon tank at Ryde, 234 feet above high-water mark, and by a continuation of the same main into two other tanks at Chatswood, at an elevation of 370 feet above high-water mark, and having a joint capacity of 3,000,000 gallons. Water is also pumped at this station direct to Pymble at 567 feet elevation and to Wahroonga at 717 feet, and to Hermitage reservoirs Nos. 1 and 2 at 302 feet elevation, having a capacity of 3,000,000 gallons. The Beecroft-Pennant Hills district is supplied from Wahroonga reservoir. A 9-inch main extends over the Gladesville and Iron Cove bridges to supply the heights of Balmain, but it is now being superseded by an 18-inch main from the Hermitage reservoir.

(iv.) *Storage Reservoirs.* In connection with the water supply there are in all thirty-two service reservoirs, with a total maximum capacity of 51,716,000 gallons.

(v.) *Revenue, Expenditure, and Capital Cost of Sydney Waterworks.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan waterworks for each financial year from 1902 to 1911.

**SYDNEY WATERWORKS—REVENUE, EXPENDITURE, AND CAPITAL COST,  
1902 to 1911.**

Year Ended 30th June.	Revenue.	Working Expenses.	Capital Cost exclusive of Items on which Interest is not charged.	Per- centage of Working Expenses to Revenue.	Per- centage of Revenue to Capital Cost.	Interest Payable on Capital Cost.	Net Profit after pay- ing Work- ing Expens- es and Interest.
	£	£	£	%	%	£	£
1902 ...	223,201	57,360	4,423,203	25.69	5.04	162,262	3,579
1903 ...	220,745	71,139	4,489,560	22.22	4.31	159,773	—10,167*
1904 ...	222,827	58,929	4,544,656	26.44	4.90	163,314	584
1905 ...	251,503	66,015	4,434,991	26.24	5.67	156,372	29,116
1906 ...	270,263	64,487	4,674,341	23.86	5.78	164,216	41,560
1907 ...	275,591†	67,593	4,902,463	24.52	5.62	176,170	31,828
1908 ...	283,410	75,016	5,009,012	26.47	5.66	183,033	25,361
1909 ...	267,519‡	80,282	5,146,303	30.01	5.19	185,591	1,646
1910 ...	284,943§	93,027	5,286,917	32.64	5.38	184,486	7,430
1911 ...	299,442	99,355	5,420,813	33.18	5.52	192,486	7,601

\* Represents a loss. † Rate reduced from 8d. to 7d. from 1st January, 1907. ‡ Rate reduced from 7d. to 6d. from 1st July, 1908, and water-meter rents abolished. § Meter rentals reimposed from 1st July, 1909, and meterage charge reduced from 1s. to 11d. per 1000 gallons.

(vi.) *Quantity of Water, Number of Houses, and Population Supplied, 1902 to 1911*  
The following table gives various particulars shewing the increase in the supply of water in Sydney and suburbs from 1902 to 1911:—

**SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES AND POPULATION  
SUPPLIED, 1902 to 1911.**

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Aver. Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population	
	No.	No.	1000 Gallons.	1000 Gallons.	Gallons.	Gallons.	Miles.
1902	101,966	509,000	21,906	7,995,822	205	43.03	44
1903	104,681	523,000	16,896	6,166,991	162	32.30	30
1904	109,191	546,000	18,690	6,840,549	171	34.23	14
1905	112,343	561,715	21,713	7,925,184	195	38.65	36
1906	116,202	581,010	22,393	8,173,555	192	38.54	60
1907	120,782	603,910	22,913	8,263,104	189	37.92	56
1908	124,083	620,400	24,567	8,967,135	197	39.50	48
1909	128,444	642,220	25,911	9,457,660	201	40.34	71
1910	133,788	668,940	26,903	9,819,657	201	40.21	100
1911	139,237	696,185	29,006	10,587,433	208	41.55	102

(vii.) *Other Water Supply Systems under the Metropolitan Board.* In addition to the main metropolitan water supply system there are certain other systems within the County of Cumberland managed by the Metropolitan Board. (a) The Richmond waterworks are entirely unconnected with the Sydney supply. The system consists of a small pumping station on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean, a 6-inch supply main, four miles in length, and five and one-eighth miles of 8-inch and 4-inch reticulation mains. (b) The Wollongong waterworks are also unconnected with the Sydney supply. The source of supply is the Cordeaux River and the catchment area is 2400 acres in extent. The total capacity of the reservoir is 173,000,000 gallons and the total length of the main about nineteen miles, exclusive of the extension to Port Kembla and Unanderra. The town, of which the estimated population on 31st December, 1909, was 4400, is reticulated with 4-inch and 3-inch pipes. (c) The Manly waterworks are supplied by a special catchment area of about 1300 acres, and are also connected with the metropolitan system by a 10-inch main from Mosman, crossing Middle Harbour, with ball and socket pipes. There are two horizontal compound duplex pumps, each having a capacity of 1,000,000 gallons in seventeen hours. (d) The water-supply for the districts of Campbelltown, Camden and Narellan, and Liverpool is not drawn from the main Sydney supply through Potts' Hill, but is received by gravitation from the upper canal at Prospect.

**7. Metropolitan Sewerage System.**—The system which is now under the control of the Metropolitan Board of Water Supply and Sewerage comprises the old and new systems. The old system was initiated by the City Commissioners in 1853, and continued by their successors, the present City Council, since their incorporation in 1857. The old system was designed on the principles of what is known as the "combined system," and comprises four main outfalls, with subsidiary sewers along the principal streets; these, in turn, receive the reticulation sewers of the minor thoroughfares. The four main outfalls discharged directly into the harbour, and the consequent pollution of the water and menace to public health led to the appointment of a commission to enquire into the best means of diverting the sewage from the harbour, and of disposing of it when thus diverted. The new intercepting system is the outcome of the labours of that commission. At the time of the transfer, in 1889, of the original sewerage works to the Metropolitan Board, there were 70½ miles of old city sewers in existence. The new system adopted is on the lines of the partially "separate system," and intercepts all sewage from the gravitation zone—i.e., from above a contour line about forty feet above high-water mark, while the sewage from the low level areas—i.e., from below that contour line is eventually pumped into the gravitation sewers. The system consists of three main outfalls, viz.:—(a) The northern outfall, discharging into the Pacific Ocean at Ben Buckler Point, near Bondi, and taking all sewage previously discharged into the harbour.



(b) The southern outfall, discharging into the sewage farm at Webb's Grant, and providing for the remainder of the city and southern suburbs. (c) The western outfall, discharging into the Rockdale end of the sewage farm and providing for the western suburbs. Another branch outfall has been constructed at Coogee, which discharges into the ocean and serves the districts of Randwick, Kensington and Coogee. On the northern side of the city extensive works have been completed. Septic tanks, into which main sewers discharge, have been constructed at Long Bay (Middle Harbour), Chatswood, and near Balmoral beach. At Manly an ocean outfall has been provided for the main sewer, and in the borough of North Sydney septic tanks were built in 1899 to deal with the sewage, while at Middle Harbour, Mosman, and Manly ample provision has been made for the sanitation of the districts.

(i.) *Revenue, Expenditure, and Capital Cost of Sydney Sewerage Systems.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan sewerage systems during each year from 1902 to 1911:—

**SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1902 to 1911.**

Year ended the 30th June.	Revenue.	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not Charged.	Percentage of Expenditure to Revenue.	Percentage of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Profit or Loss after Payment of Working Expenses and Interest.
	£	£	£	%	%	£	£
1902 ...	135,441	45,884	3,182,302	33.87	4.25	111,035	* —21,478
1903 ...	145,666	46,747	3,365,155	32.09	4.32	117,496	—18,577
1904 ...	156,274	44,458	3,562,741	28.44	4.38	124,819	—13,003
1905 ...	213,937	54,313	3,774,264	25.38	5.66	134,563	25,061
1906 ...	220,629	55,368	3,828,495	25.09	5.76	134,527	30,734
1907 ...	217,864†	62,141	3,922,514	28.52	5.55	140,980	14,743
1908 ...	216,258	64,020	4,053,591	29.60	5.33	148,142	4,096
1909 ...	214,212†	68,575	4,225,239	32.01	5.06	151,317	—5,680
1910 ...	223,131	70,851	4,351,381	31.75	5.12	151,943	337
1911 ...	234,208	79,636	4,496,290	34.00	5.20	159,070	—4,498

\* Represents a loss. † Rate reduced from 11d. to 10d. from 1st January, 1907. ‡ Rate reduced from 10d. to 9½d. from 1st July, 1908.

(ii.) *Number of Houses Drained, Population, and Length of Sewers in Sydney Metropolitan Sewerage Systems.* The following table gives particulars as to the number of houses drained, the population, and the length of sewers within the Sydney metropolitan area for each year from 1902 to 1911:—

**SYDNEY SEWERAGE SYSTEM.—NUMBER OF HOUSES DRAINED, POPULATION, AND LENGTH OF SEWERS, 1902 to 1911.**

Year ended the 30th June.	Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm-water Drains.	Ventilating Shafts Erected.	Sewers Ventilated.
	No.	No.	Miles.	Miles.	Feet.	Miles.
1902 ...	82,644	413,000	550.40	25.91	236,855	552.0
1903 ...	78,620	400,000	588.38	27.37	239,767	595.0
1904 ...	82,215	410,000	610.73	37.27	252,977	614.0
1905 ...	85,958	430,000	630.42	38.76	256,535	621.7
1906 ...	88,881	444,405	656.84	44.71	264,255	636.0
1907 ...	91,940	456,670	684.38	44.82	281,885	654.0
1908 ...	96,384	481,920	724.37	46.94	286,000	684.0
1909 ...	99,442	497,210	760.16	47.30	299,910	714.0
1910 ...	102,896	514,480	793.55	47.82	344,820	756.0
1911 ...	108,012	540,060	825.20	48.85	376,900	795.0

**8. The Hunter District Water Supply and Sewerage Board.**—The waterworks of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply and Sewerage Act of 1880. In 1892 a special Act was passed establishing an independent Board to control the water-supply works. This Board consists of seven members, of whom three are nominated by the Governor, one elected by the Newcastle Municipal Council, two by the adjacent municipalities, and one by the municipalities of East and West Maitland and Morpeth. The following municipalities and incorporated areas are within the area of the Board's jurisdiction:—

*Newcastle Division.*—Adamstown, Argenton, Ash Island, Boolaroo, Carrington, Hamilton, Hexham, Holmesville, Lambton, Merewether, Minmi, Newcastle, Plattsburg, Wallsend, Waratah, and Wickham.

*Maitland Division.*—Abermain, Aberdare, Bolwarra, Cessnock, East Greta, Heddon Greta, Hinton, Homeville, Kurri Kurri, Lorn, East and West Maitland, Morpeth, Oakhampton, Pelaw Main, Rutherford, Stanford Merthyr, Telarah, and Weston.

(i.) *Description of Waterworks.* The water supply is pumped up from the Hunter River about a mile and a half up stream from West Maitland, the engines being situated above flood level on a hill about forty-four chains from the river. At the pumping station there is a settling tank of 1,390,500 gallons capacity, six filter beds, a clear water tank holding 589,500 gallons, and a storage reservoir of 172,408,100 gallons capacity. The filtered water is pumped from the clear water tank into two summit reservoirs, one of which is connected by a 10-inch cast-iron main  $4\frac{1}{2}$  miles in length, and supplies East and West Maitland, Morpeth, and Maitland, while the other is fed by two rising mains, one riveted steel pipe  $20\frac{3}{4}$  in. diameter, and a 15-inch cast-iron main,  $5\frac{1}{2}$  miles long, and supplies the other districts under the control of the Board. In seven of these districts reservoirs having a total capacity of nearly 4,000,000 gallons are supplied by gravitation. On the hill at Newcastle there is also a high-level iron tank with a capacity of 20,000 gallons, which is supplied by a small pumping engine on the roof of the Newcastle reservoir. The total length of water mains is  $384\frac{1}{4}$  miles.

(ii.) *Water Supply, Capital Cost, Revenue, and Expenditure.* By the Act of 1892 referred to above and an Amending Act of 1894 the capital debt of the Board was to be liquidated by annual instalments distributed over 100 years with interest at  $3\frac{1}{2}$  per cent. By a further amending Act of 1897 the repayment of expenditure on permanent works was abrogated, and the annual instalments were to be paid in liquidation of the cost of renewable works to be fixed by the Government from year to year. The capital debt of the Board to the Government at 30th June, 1911, was in respect of water supply £477,204, and £170,151 in respect of sewerage. In the subjoined table particulars are given as to the revenue and expenditure, and also as to the number of houses and population supplied for each financial year from 1902 to 1911 inclusive:—

**PARTICULARS OF THE HUNTER DISTRICT WATER SUPPLY, 1902 to 1911.**

Year ended 30th June.	Revenue.	Working Expenses (including Interest).	Houses Supplied.	Estimated Population Served.	Supply.	
					Daily Average.	Total.
	£	£	No.	No.	1000 Gallons.	1000 Gallons.
1902 ... ..	29,558	32,109	9,875	49,400	1,119	408,508
1903 ... ..	31,102	32,217	10,522	52,600	1,113	406,172
1904 ... ..	31,360	32,361	11,100	55,500	1,093	399,954
1905 ... ..	34,486	33,714	12,167	60,800	1,266	461,936
1906 ... ..	40,801	34,801	12,968	64,800	1,479	539,655
1907 ... ..	41,776	38,886	13,569	67,845	1,479	539,965
1908 ... ..	45,695	39,615	14,457	72,285	1,654	603,755
1909 ... ..	43,395	41,184	15,679	78,395	1,766	644,689
1910 ... ..	46,767	43,126*	16,446	82,230	1,650	602,497
1911 ... ..	45,711	45,020	17,164	85,820	1,850	675,214

\* Inclusive of an instalment of £10,675 to the sinking fund for reconstruction of renewable works.

The average daily consumption of water for all purposes per inhabitant was 21.55 gallons during the year 1911, as against 20.07 gallons during the previous year.

(iii.) *Sewerage Works.* Considerable progress has been made by the Department of Public Works with the construction of the sewerage works for Newcastle and suburbs. The scheme is designed on the separate system, and will deal with the sewage partly by gravitation and partly by pumping. The works within the first two completed sections were transferred to the Board in 1907, those within the third section in March, 1910, and those within the fourth section in February, 1912. Up to the 30th June, 1911, about 30 miles of sewers, connecting with 1465 separate properties, were under the control of the Board. For the financial year 1910-11 the revenue was £8974 and the expenditure £9584, the latter amount including a £1039 instalment to the Sinking Fund for the reconstruction of renewable works.

**9. Water Supply and Sewerage in Country Towns.**—With the object of assisting municipalities to construct systems of water supply and sewerage, the Country Towns Water Supply and Sewerage Act of 1880 was passed, but has since been amended by the Acts of 1887, 1894 and 1905. Under these Acts the amount for carrying out the works is advanced by the State, and the municipality has the option of undertaking the construction of the works, failing which the Government undertakes the duty. Municipalities which avail themselves of the provisions of the Act are empowered (in addition to levying ordinary municipal rates) to levy a special rate for each service, based (at the option of the councils) upon either the improved or unimproved capital value of the lands so liable for rating, such rate not to exceed a maximum of 10 per cent. upon the assessed value of the lands and tenements so taxed. The original Act, as amended in 1894 and in 1905, provides that the sum advanced, with interest at 4 per cent. per annum, must be repaid by a maximum number of 100 yearly repayments, and also provides for the issue of licenses to workmen, for the recovery of rates and for making by-laws for the assessment of lands and other purpose.

(i.) *Waterworks.* Up to the 30th June, 1910, forty-eight country municipalities had availed themselves of the privileges of the Act as regards waterworks, all of which at that date had been completed and handed over by the Government. The total amount expended on these works was £854,949, and the total of the sums payable annually for a period of 100 years was £31,755, including interest at the rate of  $3\frac{1}{2}$  per cent., the first repayments having become due at various dates ranging from the end of the year 1893 to the end of 1908. In the calculation of these repayments the interest on the expenditure has been added, and any payments by the councils, as well as sums remitted under the authority of the Act, have been deducted. A number of other municipalities have constructed works out of their own resources.

(ii.) *Sewerage Works.* Only eleven municipal councils have taken advantage of the Act providing for the construction of sewerage works in country towns. On the 30th June, 1910, the capital debt of these systems was £124,115, the amount payable annually to the Government being £4669. Other sewerage systems are in existence in several places, but with few exceptions the operations have been on a small scale.

**10. Board of Fire Commissioners of New South Wales.**—Reference has been made in the section of this book dealing with the subject of *Private Finance* (see page 875) to the constitution of the Board of Fire Commissioners of New South Wales, which has now superseded the Metropolitan and all other Fire Brigade Boards in that State.

(i.) *Receipts and Disbursements of Board of Fire Commissioners of New South Wales for 1910 and 1911.* The subjoined table shews the actual receipts and disbursements of the Board, for the years 1910 and 1911 inclusive:—

**NEW SOUTH WALES BOARD OF FIRE COMMISSIONERS.—RECEIPTS AND  
DISBURSEMENTS FOR SYDNEY FIRE DISTRICT, 1910 and 1911.**

Year.	Receipts.						Disbursements.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From Firms.	From other Sources.	Total.	
	£	£	£	£	£	£	£
1910 ...	21,624	21,624	21,181	442	607	65,478	58,168
1911 ...	21,643	21,643	21,198	444	1,145	66,073	60,667

With reference to the preceding table, under the "Fire Brigades Act 1909," by which the New South Wales Board of Fire Commissioners was constituted and which came into operation on 1st January, 1910, insurance companies do not now, as formerly, return the amount of their risks, but give in lieu thereof the amount of premiums received, which forms the basis of their contribution towards the revenue of the Board. The Board, with consent of the Minister, is empowered to divide the State into fire districts and to make annually an estimate of the amount it proposes to expend therein during the following year, but such estimate must be made so that the amount of contribution levied against such fire districts shall not exceed  $\frac{1}{4}$ d. in the £ on the unimproved capital value of all ratable land within each district. Every insurance company pays annually to the funds of the Board a percentage contribution, to be fixed by the Board on the total amount of premiums (excluding the reinsurance proportion thereof) which each company receives out of each fire district, within each of which uniform percentages prevail. By this Act also firms which effect insurances with companies not registered in New South Wales are likewise required to make contributions on account of the premiums paid to such companies, which is the first instance of this class of insurer being compelled to share the expense of local advantages, which had hitherto been available free of cost. The Sydney fire district includes the City of Sydney and suburbs, comprising a total area of 152½ square miles.

**11. Sydney Harbour Trust.**—The establishment of this Trust was the direct outcome of the outbreak of bubonic plague in the port of Sydney in the early part of the year 1900. It was proved that this disease was due to the introduction of plague-stricken rats in vessels arriving from ports in which the disease had made its appearance. As a consequence the whole of the foreshores of the harbour, together with certain adjoining wharves, stores, dwelling houses, and other properties, were vested in a body of trustees. The Trust was established by an Act which came into force on the 11th February, 1901. Under this Act an independent body of three Commissioners was created for the purpose of administering the affairs of the harbour and of fostering its interests, each commissioner being entitled to hold office for seven years, subject to certain conditions. This Board of Commissioners is invested with the exclusive control of the port and shipping, lighthouses, beacons, buoys, wharves, and docks (with the exception of wharves and docks constructed on land which has been alienated from the Crown), in Sydney Harbour, and is empowered to levy certain tolls, dues, rates, rents, and charges, and to resume or purchase lands and buildings. Prior to the establishment of the Trust, the extensive foreshores of the port offered opportunities to private individuals of acquiring water frontages, which enabled them to participate in the revenue to be derived from the wharfage and tonnage rates as prescribed by the various Acts. This alienation of the water frontages was in return for comparatively small payments. In effect, this deprived the Crown of an annual revenue which, under other circumstances, might have been applied to the maintenance of the port. One of the greatest changes made by the Sydney Harbour Trust Act was the alteration of the basis upon which wharfage is charged, so that goods which do not use the wharf, but are lightered overside, are subject to wharfage. The Act embodied the wharfage schedule appended to the Wharfage and

Tonnage Rates Act of 1880, by which the inward rates were fixed at one shilling and eightpence per ton, and the outward at tenpence; but it did not provide for any reduced rate for transhipment goods arriving from overseas as had previously been allowed, although it gave the Commissioners power to make or to recommend certain exemptions and to increase the inward wharfage to three shillings per ton measurement, or to four shillings per ton dead-weight. During the year 1901 the Commissioners recommended the Government to increase the inward rates to two shillings and sixpence per ton and to abolish outward wharfage, and these recommendations were duly endorsed by the Executive Council. Liberal concessions were also made with regard to transhipment goods arriving from overseas. All goods produced or manufactured within the State of New South Wales were exempt from wharfage rates until the Sydney Harbour Rates Act 1904 was passed. Under this Act a schedule of wharfage charges was provided for, a small charge of fivepence per ton being imposed on all goods transhipped; important amendments were also made in the old tonnage rates charges (which had been in existence since 1880), with the result that many vessels which previously escaped payment have now to pay a fair charge for the use made of the wharfage accommodation provided by the Trust. Considerable improvements have been made by the Commissioners in the wharfage accommodation of the port and in the sanitary condition of the area vested in the Trust by the construction of new jetties, sheds, offices, and waiting rooms; by dredging and by preventing the pollution of the waters of the port; by opening up new roads; and by taking means to prevent rats and other vermin from finding a harbourage in the produce stores and in the vicinity of the wharves.

(i.) *Revenue, Expenditure, and Capital Cost.* The subjoined table gives particulars of the revenue and expenditure of the Trust, and also shews the total capital debt for properties, etc., vested in the Commissioners, the amount of interest payable on the debt, and the balance of revenue after deducting expenditure, interest, and the amount of the Commissioners' salaries:—

**SYDNEY HARBOUR TRUST.—REVENUE, EXPENDITURE, CAPITAL DEBT, INTEREST AND BALANCE, 1901 to 1911.**

Year ended the 30th June—	Revenue.				Expenditure.	Total Capital Debt.	Interest.†	Balance
	Wharfage & Harbour Rates.	Tonnage Rates & Berthing Charges	From Other Sources.	Total.				
1901* ...	42,784	3,208	12,324	58,316	11,275	4,692,782	55,554	— 8,518
1902 ...	127,199	9,824	82,683	219,706	75,692	4,806,534	169,874	—25,860
1903 ...	147,653	3,762	104,730	256,145	86,172	4,950,299	173,112	— 3,139
1904 ...	117,214	5,715	138,748	261,677	83,765	5,030,209	177,906	6
1905 ...	111,891	7,076	134,614	253,581	76,776	5,074,422	180,966	— 4,161
1906 ...	143,625	8,759	118,305	270,689	80,027	5,112,417	178,779	11,883
1907 ...	163,597	11,344	123,001	297,942	82,669	5,137,646	184,074	31,199
1908 ...	183,045	12,525	131,955	327,525	90,782	5,227,360	189,265	47,478
1909 ...	183,753	11,539	139,076	334,368	103,882	5,338,108	191,532	38,954
1910 ...	183,094	11,563	142,390	337,047	142,763†	5,482,060	191,246	3,038
1911 ...	212,061	15,536	146,158	373,755	143,181†	5,627,756	200,845	29,729

\* For the period from 11th February to the 30th June, 1901. † The rate of interest charged each year is the average rate on the total capital debt of the State, which varies. — Represents a loss. ‡ Including expenditure for the renewal, replacement or reconstruction of wharves or buildings, viz., £34,970 in 1910, and £23,650 in 1911.

The revenue for the year 1910-11 shows an increase of £36,708 on that for the previous year, and is the highest attained since the formation of the Trust. The corresponding increase in expenditure was £11,738, exclusive of expenditure on renewals, etc., which was incurred chiefly on account of extra requirements for dredging, and sundry other items.

(ii.) *Dredging and Towing.* The subjoined statement gives particulars of the dredging and towing done by the dredges and tug boats owned by the Trust:—

**SYDNEY HARBOUR TRUST.—PARTICULARS OF DREDGING AND TOWING,  
1905 to 1911.**

Year.	Dredging.			Towing Dredged Material.		
	Tons Dredged.	Total Expenditure.	Expenditure per Ton.	Miles run Towing.	Total Expenditure in Towing.	Expenditure per Mile Towing.
	Tons.	£	Pence.	Miles.	£	Pence.
1905 ...	490,045	8,808	4.31	46,542	5,378	27.73
1906 ...	489,610	8,311	4.08	39,301	5,207	31.78
1907 ...	482,474	8,087	4.02	45,617	5,392	28.37
1908 ...	504,760	8,915	4.24	45,485	6,940	36.62
1909 ...	434,504	13,066	7.22	38,699	6,634	41.14
1910 ...	448,650	11,495	6.15	33,048	5,519	40.08
1911 ...	1,675,945	19,058	2.72	38,372	5,442	34.04

### § 3. Victoria.

1. **Development of Types of Local Authorities.**—In Victoria there are now two types of municipal institutions, (a) boroughs, including cities and towns, and (b) shires, and although they are now dealt with by the same Act, their origin was distinct, and in the early days of their development they were provided for by independent enactments. Melbourne and Geelong, the latter of which was for many years the second largest town in the State, having been incorporated under special statutes prior to the establishment of a general system of local government, are not subject to the provisions of the Local Government Acts except in a few comparatively unimportant details. Melbourne was incorporated as a town in 1842, and as a city in 1947; Geelong was incorporated as a town in 1849, and proclaimed a city on 14th December, 1910.

(i.) *Institution of Road Districts.* The Imperial Act of 1842, under which the Governor of New South Wales was authorised to form districts for the purpose of self-government, has already been referred to. This Act was succeeded by the Act of 1850, which separated the district of Port Phillip from New South Wales, and provided that the proclamation of districts (under the Act of 1842) which had not been followed by an election of councillors should be void, and where councillors had been elected the Letters Patent forming such districts could be revoked by petition. For the future such districts were only to be incorporated upon petition of the inhabitants to the Governor, who was authorised to establish elective district councils, with power to frame by-laws for making and maintaining roads and bridges, establishing schools, and levying local tolls and rates. The necessity for a more comprehensive scheme of local government soon became apparent, owing to the increase of settlement on the land which followed the excitement of the gold rush, and in 1852 two committees of the Legislative Council were appointed, one to enquire into the operations of district councils which had been established, the other to report generally upon the condition of the roads and bridges in the State, and as to how the funds for their construction and maintenance could be best expended. The report of the latter committee was of considerable value, because it formed the basis of the first Victorian Act which provided a scheme for the local government of country districts, namely, the Roads Act of 1853. Under this Act a distinction was made between main roads and parish or cross roads. The Governor was authorised to declare any part of the colony to be a road district; main roads were placed under the care of a central Road Board with an Inspector-General and staff, while parish roads were to be made and maintained by the district councils, which were empowered to levy rates for the purpose.

(ii.) *Establishment of Shires and Extinction of Road Districts.* The Act of 1853 continued in force for ten years, when it was repealed, its provisions as amended

being re-enacted by the Road Districts and Shires Act 1863. By this Act the central Road Board was abolished, and the establishment of shires and shire councils was authorised. Any district having an area of not less than 100 square miles and a revenue from general rates of not less than £1000 might be incorporated as a shire, the duties and powers of which were the same as those of the districts, but additional privileges, such as power to raise loans and to grant licenses, were conferred upon the shires. Provision was also made for the regulation of the proceedings of shire councils, the preparation of voters' lists, elections, accounts, revenue, rates, auditors, and other matters, and these provisions have been substantially continued in later Acts. The result of the Act of 1863 was that the road districts were gradually developed into or were absorbed by the shires, and the next important measure which was passed, the Shires Statute Act of 1869, recognised only the latter, and with respect to shires retained the principal features of the preceding Act.

(iii.) *Constitution of Urban Municipal Districts and Boroughs.* In the meantime suburban districts and country towns were growing up, and in the year 1854 an Act was passed for the establishment of municipal boroughs in Victoria. Provision was made whereby any district having an area of not more than nine square miles, no part of which was more than six miles from any other part, and having a population of not less than 300, might, on petition, be constituted a municipal district. This Act, which thus originated those municipalities now known as boroughs (including cities and towns), was amended and repealed by the Municipal Institutions Consolidating and Amendment Act 1863, which re-enacted the principal features of the previous Act. These features are practically the same as those which now prevail with regard to boroughs. The Act of 1863 was in turn amended from time to time, and the law relating to boroughs was consolidated in 1869 by the Boroughs Statute Act.

(iv.) *Legislation applying to all Types of Municipalities.* Both the Shires Statute Act and the Boroughs Statute Act of 1869 were repealed and their provisions amended and consolidated by the Local Government Act 1874, which, after further improvements and extensions, was in turn consolidated by the Local Government Act 1890, which was itself amended from time to time. In 1899 a select committee of the Legislative Assembly was appointed to enquire into and to report upon the working of the Act of 1890 and to suggest amendments required in the law relating to local government. This committee was subsequently constituted a Royal Commission, and in 1902 issued a report to which was appended the draft bill which became the Local Government Act 1903, the provisions of which now regulate the working of municipalities in the State.

**2. Local Government Systems now in Operation.**—Local government is now administered under the Act of 1903 throughout the whole of the State, with the exception of about 6000 square miles in the mountainous parts of the county of Wonnangatta, and the whole of French Island.

(i.) *Constitution of Municipalities.* Provision is made for the continuation of municipalities established under previous Acts and for the constitution of new ones.

- (a) *Shires.* Any part of the State containing ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £1500 may be constituted a shire upon petition of at least fifty inhabitants.
- (b) *Boroughs.* Any part of the State, not exceeding in area nine square miles, and having no point distant more than six miles from any other point, and containing a population of not less than 500 and ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £300, may be constituted a borough upon petition of at least 250 resident householders. Any borough having during the preceding financial year a revenue of £10,000 may be declared a town, or having a revenue of £20,000 may be declared a city upon petition under the common seal of such borough. Provision is

also made for severing any part of a municipality and annexing the same to an adjoining municipality: for dividing municipalities into any number of subdivisions not exceeding eight; and for uniting two or more boroughs which form one continuous area so as to form one borough.

- (c) *Townships.* Upon petition signed by not less than twenty-five ratepayers resident in any portion not exceeding three square miles in extent of any shire and distant more than ten miles from the boundaries of the city of Melbourne, the Governor may, with the consent of the municipal council, proclaim such portion a township.

(ii.) *The Municipal Council.* It is provided by the Act of 1903 that, in the case of existing municipalities, the council shall consist of the number of members assigned to it at the commencement of the Act, but, when the number of members is determined under the Act, such number shall be, in case the district is not subdivided, some multiple of three, not less than six nor more than twenty-four, and, in case such district is subdivided, the number produced by the return of three councillors for every subdivision. Every person liable to be rated in respect of property in the municipal district of the ratable value of £20 at the least is qualified to hold the office of councillor in any municipality, provided that no female, nor any undischarged bankrupt, nor a person attainted of treason or convicted of felony shall be so qualified. Other persons may also be disqualified on the ground of interest. Provision is made for the retirement of one-third of the councillors annually in rotation, and for the election and privileges of the chairman, who is styled the mayor of a borough or the president of a shire.

(iii.) *The Municipal Electorate.* Every person who on the 10th June in any year has attained the age of twenty-one years, and is liable to be rated in respect of property within a municipal district, in respect of which all rates made before the 10th March of the year have been paid, is entitled to be enrolled as a voter, but no person may be enrolled in respect of property rated under £5 a year, unless there is a house on the property, and he resides there. The occupier and the owner of any ratable property may not be both enrolled in respect thereof, the former having the right to be enrolled instead of the latter. Corporations liable to be rated may appoint not more than three persons to be enrolled in their place. Joint occupiers and owners, not exceeding three, are each entitled to be enrolled, and in case more than three persons are rated in respect of any property, those whose names stand first in order upon the rate last made or upon the last valuation and return are so entitled. Plurality of votes is allowed on the scale shewn in the following statement:—

#### VICTORIA.—PROPERTY QUALIFICATIONS FOR ENROLMENT AS MUNICIPAL VOTER.

Number of Votes.	Annual Ratable Value of Property.	
	Boroughs (including Cities and Towns).	Shires.
1	Under £50.	Under £25.
2	From £50 to £100.	From £25 to £75.
3	£100 and upwards.	£75 and upwards.

Voters' lists are prepared annually by collectors appointed for the purpose; provision made for the revision of the lists, for the time and place of holding elections, for the



nomination of candidates, for the application of the Voting by Post Act 1900; for the appointment of officers, and for the meetings and proceedings of councils.

(iv.) *Powers and Functions of Councils.* Municipal councils are empowered to make by-laws for a great number and variety of purposes, of which the most important are as follows:—The control and regulation of roads and streets, buildings, wharves, and public places, of nuisances, passenger vehicles, carters, boatmen, and porters; the regulation and maintenance of water supply, sewerage, drainage, and lighting; the establishment and control of fairs and public sales, labour marts and offices; the preservation and management of commons and public reserves; the regulation of traffic and hoardings; the public health and the prevention of contagious or infectious diseases, and generally for maintaining the good rule and government of the municipality. Councils are authorised to undertake the supply of light, heat, or motive power for public or private purposes; they may construct and maintain tanks, dams, and reservoirs, and may provide public baths, markets, weighbridges, pounds, abattoirs, places of public recreation, and charitable institutions. One of the principal functions of the councils is to construct and maintain public highways, streets, bridges, ferries, and jetties within their respective localities. At the request of the council the provisions of the Act as to the maximum weight which it is permissible to carry on vehicles on any public road within the municipality, may be made to apply by proclamation.

(v.) *Ratable Property.* All land, including buildings and improvements thereon, within a municipality is ratable property, except the following:—Crown lands unoccupied or used for public purposes; land used exclusively for commons, mines, public worship, mechanics' institutes, public libraries, cemeteries, free primary schools, and charitable purposes; land vested in, in the occupation of, held in trust for, or under the control of any municipality, local governing body, or commissioners under the Rates Act; land vested in the Railway Commissioners, in the Minister of Public Instruction, in the Board of Land and Works, in the Commissioners of the Melbourne Harbour Trust, and in the Melbourne and Metropolitan Board of Works. The valuation of all property is computed at its net annual value, that is to say, at the rent at which the same might reasonably be expected to let from year to year, free of all usual tenants' rates, taxes, and cost of insurance, but no ratable property may be computed as of an annual value of less than 5 per cent. upon the fair capital value of the fee-simple thereof.

(vi.) *Rates.* The municipal councils are empowered to levy rates, which, together with grants and subsidies received from the Government, license fees, market dues, rents, tolls, and sanitary charges, form their chief sources of income. The rates which may be levied are of three kinds, namely—general, extra, and separate rates.

(a) *General Rates* are levied at least once in every year, and must not exceed two shillings and sixpence in the pound of the net annual value, nor be less than sixpence in the pound of such value. Every general rate must be made for one year or half a year, or such other period less than a year, but not less than three months, as the council thinks fit, and must be levied on the occupier of the property rated, or if there be no occupier, or if the occupier be the Crown or the Minister of Public Instruction, or a public or local body, then upon the owner of the property.

(b) *Extra Rates* may be levied in any municipal district which is subdivided equally in respect of all the ratable property within any one or more of the subdivisions, but cannot be levied except in accordance with the requisition of not less than two-thirds of the councillors returned by such sub-division. The amount of general and extra rates levied in any year must not exceed two shillings and sixpence in the pound of the net annual value.

- (c) *Separate Rates* may be levied where it appears to the council that any works or undertakings authorised by the Act are for the special benefit of any particular portion of the municipal district, but may be made only upon petition signed by a majority of the occupiers and by at least one-third of the owners of the properties affected, and must be confirmed by order of the Governor-in-Council. Separate rates may be levied equally on all properties affected, or may be differential according to the benefits to be received by different properties, and the amount of the rate must be such as will, in the opinion of the council, suffice to provide for the payment of interest and periodical repayments of, or sinking fund for, the money borrowed on the security of such rate.

(vii.) *Borrowing Powers.* The council of every municipality may borrow money upon the credit of such municipality by the sale of debentures, either for the purpose of liquidating previous loans or for the purpose of constructing certain specified permanent works or undertakings, such as the construction, alteration, or enlargement of streets, roads, bridges, ferries, sewers, and drains; the construction and purchase of waterworks, electric light or gas works, abattoirs, markets, baths, pleasure grounds, libraries, museums, and places of public resort and recreation; the establishment of hospitals, asylums, and other buildings for charitable purposes; the destruction and disposal of refuse, and the purchase of land or any easement, term, right, or privilege in, over, or affecting land. The amount of money so borrowed at any time for permanent works must not exceed ten times the average income of the municipality for the three preceding years, and the amount borrowed in the case of any municipality already indebted must not exceed the difference obtained by subtracting from ten times such average income the balance remaining unpaid of any previous loans. The question as to whether any loan for the purpose of permanent works shall be incurred must be submitted to a poll of the ratepayers upon demand signed by any twenty persons whose names are inscribed on the municipal roll. The council of any municipality may, in addition to the borrowing powers mentioned above, borrow money for permanent works or undertakings on the security of its income, but not upon the credit of the municipality, by the issue of debentures or by a mortgage over such income. The amount of money so borrowed must not at any time exceed five times the average income of the municipality for the three preceding years. The income referred to does not include moneys derived from general, separate, or extra rates, special improvement charges, publicans' licenses, or endowment from the consolidated revenue fund. Temporary advances by way of overdraft of the current account may also be obtained, but must not at any time exceed one-half the prior year's revenue.

(viii.) *Endowment.* Under the Local Government Act 1874 an annual endowment of £310,000 was provided for the municipalities. This amount ceased to be payable in 1879, but a subsidy, amounting to £310,000, was voted by Parliament annually, and was increased year by year, until £450,000 was granted in 1889-90 and 1890-91. The Local Government Act 1891 authorised the payment of an annual endowment of £450,000, but this amount was reduced year by year to £50,000 in 1902, but was increased to £75,000 for the year 1906-7, and to £100,000 from the 1st July, 1907. For the purpose of distributing the endowment, the shires are classified. Under the Municipal Endowment and Reclassification of Shires Act 1907, a new classification was adopted under which the amount of the endowment is to be allocated. In addition to the endowment of £75,000 (increased to £100,000 from the 1st July, 1907) the municipalities received from the Government during the financial year 1910-11 a sum of £82,909 out of the Licensing Act Fund as the equivalent for (a) fees for licenses, (b) fees for the registration of brewers and spirit merchants, and (c) fines, penalties, and forfeitures incurred under the Licensing Act 1876. Under the Act of 1907 the endowment of £100,000 is payable in equal moieties in March and September of each year. No city or town is entitled to receive any part of the endowment. The distribution

amongst the boroughs and shires is based on the amount of general and extra rates received in the twelve months ending on the preceding 30th September according to the following scale:—

**VICTORIA.—ENDOWMENT OF BOROUGHS AND SHIRES, 1910-11.**

To every Borough or 1st Class Shire, 3s. in the £	To every 4th Class Shire, 8s. in the £
" " 2nd Class Shire 5s. " "	" 5th " 10s. " "
" " 3rd " " 6s. " "	" 6th " 12s. " "

For the three financial years commencing the 1st July, 1907, however, the amounts were definitely fixed by Act No. 2129, and for the financial year 1910-11 by Act No. 2267.

**3. Boroughs and Shires.—Number, Population, and Value of Ratable Property, 1902 to 1911.**—The following table shews the number of cities, towns, boroughs, and shires, their estimated population, the number of ratepayers and dwellings, and the value of ratable property for the years 1902 to 1911 inclusive:—

**VICTORIA.—PARTICULARS OF MUNICIPALITIES, 1902-11:**

Financial Year.	Number of Municipalities.	Estimated Population.	Number of Ratepayers (both sexes).	Estimated Number of Dwellings.	Estimated Value of Real Property.	
					Total.	Annual.
CITIES, TOWNS, AND BOROUGHES.						
1902	60	*647,397	157,820	*134,465	£ 77,289,493	£ 5,223,282
1903	60	632,607	155,262	140,248	92,099,451	5,308,546
1904	60	652,658	158,691	142,352	93,376,880	5,366,477
1905	60	657,815	159,953	143,667	94,533,732	5,498,471
1906	†60	684,358	169,536	149,649	99,354,665	5,664,425
1907	60	695,192	171,909	151,833	100,801,295	5,779,231
1908	60	708,672	176,420	153,629	103,666,178	5,944,691
1909	60	719,293	178,928	156,099	106,149,960	6,080,447
1910	60	731,050	183,419	159,478	108,863,963	6,232,091
1911	60	*738,870	187,562	162,489	114,113,507	6,508,544
SHIRES.						
1902	148	*551,523	147,671	*118,538	£ 107,812,500	£ 5,661,805
1903	148	557,285	150,724	118,996	111,803,468	5,880,386
1904	148	556,350	152,204	121,643	115,766,850	6,071,353
1905	148	552,414	153,908	121,335	116,336,442	6,244,799
1906	†146	541,242	149,350	118,339	117,260,959	6,130,718
1907	146	565,739	151,869	120,114	121,797,646	6,395,094
1908	146	573,715	152,973	121,465	129,059,488	6,694,209
1909	146	581,866	155,492	123,459	136,538,811	7,043,511
1910	146	588,156	159,410	124,739	143,142,655	7,332,397
1911	146	*571,694	163,916	126,951	150,970,220	7,716,815

\* Census figures. † The shires of Coburg and Camberwell were constituted boroughs, and North Melbourne and Flemington were joined to City of Melbourne in 1905.

**4. Municipal Assets and Liabilities, 1905 to 1910.**—The assets of municipalities may be classified under three heads—(a) the municipal fund, (b) the loan fund, and (c) property; the liabilities under two heads—(a) the municipal fund, and (b) the loan fund. The following table shews the amount of municipal assets and liabilities for each financial year from 1905 to 1910 inclusive:—

## VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1905 to 1910.

Items.	1905.	1906.	1907.	1908.	1909.	1910.
ASSETS.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Uncollected rates ... ..	119,028	124,174	112,435	116,223	114,598	110,676
Other assets ... ..	168,737	184,380	196,048	182,790	267,944	350,092
LOAN FUND—						
(a) Sinking funds						
Amount at credit ... ..	701,503	740,382	772,662	796,272	812,920	834,295
Arrears due ... ..	4,459	1,341	3,616	2,806	2,827	3,286
(b) Unexpended balances ...	112,643	302,400	325,901	220,674	106,852	345,287
PROPERTY—						
Buildings, markets, etc. ...	2,530,858	2,573,017	2,697,701	2,826,394	2,992,809	3,149,476
Waterworks ... ..	234,461	221,548	223,687	220,669	207,451	202,210
Gasworks ... ..	65,760	60,510	66,269	66,638	57,399	70,687
Total ... ..	3,937,449	4,207,752	4,398,319	4,432,466	4,562,800	5,066,009
LIABILITIES.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Arrears due sinking funds ...	4,459	1,341	3,616	2,806	2,827	3,286
Overdue interest ... ..	16,637	16,951	17,060	18,535	15,639	15,750
Bank overdrafts ... ..	90,660	89,370	94,825	122,453	120,705	133,237
Temporary Government advances	4,018	694	...	...	...	...
Other liabilities ... ..	139,717	175,964	179,342	194,283	233,359	*293,089
LOAN FUNDS—						
Loans outstanding ... ..	4,186,602	4,375,116	4,442,713	4,437,673	4,416,103	4,767,138
Due on loan contracts ... ..	27,438	2,256	39,726	88,056	49,452	45,089
Total ... ..	4,469,531	4,661,692	4,777,282	4,863,836	4,838,085	5,257,589

\* Including £98,187 due on current contracts.

5. Revenue and Expenditure of Municipalities, 1905 to 1910.—The following table shews the revenue from various sources, and the expenditure under various heads, of municipalities during each year from 1905 to 1910 inclusive:—

## VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1905 to 1910.

Items.	1905.	1906.	1907.	1908.	1909.	1910.
SOURCES OF REVENUE.						
	£	£	£	£	£	£
Taxation ... { Rates ... ..	802,253	836,024	887,580	902,741	946,956	999,799
Licenses ... ..	112,475	106,621	106,742	106,758	101,682	102,066
Dog fees ... ..	16,022	16,257	17,455	17,628	18,751	19,296
Market and weighbridge dues ... ..	55,259	56,939	57,190	57,386	68,014	65,739
Government endowments and grants ...	90,572	95,090	117,304	172,648	175,601	187,323
Contributions for streets, etc ... ..	22,755	18,597	30,816	34,246	35,173	47,532
Sanitary charges ... ..	55,731	56,052	56,918	58,072	59,966	62,720
Rents ... ..	60,344	63,242	66,601	67,387	69,842	77,958
Other sources ... ..	129,810	139,470	163,825	208,403	195,831	207,181
Total ... ..	1,345,221	1,388,292	1,504,431	1,625,269	1,671,816	1,769,614
HEADS OF EXPENDITURE.						
	£	£	£	£	£	£
Salaries, etc ... ..	136,066	141,438	147,933	152,302	158,436	163,435
Sanitary work, street cleaning, etc. ...	131,378	135,466	134,632	142,769	150,964	159,571
Lighting ... ..	69,915	72,571	76,217	79,832	82,354	83,972
Fire brigades' contributions ... ..	16,061	17,431	17,144	20,724	22,051	23,223
Public works { Construction ... ..	198,275	217,346	266,658	313,607	288,869	335,446
Maintenance ... ..	378,859	403,791	441,335	474,188	490,341	548,583
Formation of private streets, etc. ...	23,676	19,627	28,296	32,718	37,898	32,163
Redemption of loans ... ..	55,866	49,483	54,998	60,568	58,263	46,439
Interest on loans ... ..	186,439	188,111	196,965	198,632	201,199	206,355
Charities ... ..	13,185	13,637	13,401	14,666	15,241	15,589
Other expenditure ... ..	134,023	118,748	156,894	187,830	173,154	170,840
Total ... ..	1,343,743	1,377,649	1,534,473	1,677,836	1,678,760	1,785,616

**6. The Melbourne and Metropolitan Board of Works.**—This Board was established by an Act which came into force on 20th December, 1890, and entered upon its duties on 18th March, 1891. The Board consists of forty members, one of whom is a chairman elected every four years by the other members, the retiring chairman being eligible for re-election. Nine members are elected by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran, two each by the Fitzroy, Richmond, St. Kilda, and Collingwood, and one each by the other suburban municipal councils returning a representative. Thirteen of the members retire annually in the month of February, but are eligible for re-election if they remain members of their respective councils. The district over which the Board exercises control consists of twelve cities, seven towns, and one borough, two shires, and parts of two others, or twenty-four municipalities in all, comprising a total area of 109,009 acres, and containing an estimated population on the 31st December, 1911, of 594,250 (including those supplied with water outside the Board's area). The waterworks for the supply of Melbourne and suburbs were originally carried out by the Government, which had for that purpose contracted loans amounting to £2,389,934; these works were vested in the Board in 1891. The primary object of the creation of the Board was not, however, to take over these works, but was to supply the long called for and pressing want of a sewerage system for the metropolis. The plans and estimates of the cost of the metropolitan sewerage were originally prepared by an expert civil engineer from England, and were furnished to the Board on its creation. The plan recommended by the designer and selected by the Board's engineer-in-chief was estimated to cost £5,030,000, but this plan was modified by the engineer-in-chief, with the concurrence and assistance of the Board, so as to reduce the estimated cost to £3,451,000. The original plan and estimate contemplated only the construction of the main and branch sewers by the Board, but as Parliament had added the duty of constructing sewers in streets, right-of-ways and branches therefrom the original estimate has necessarily been exceeded. To carry out its work the Board is authorised to borrow £8,750,000, exclusive of the loans contracted by the Government for the purpose of waterworks and taken over by the Board. The liability on Government loans on the 30th June, 1911, was £1,688,663, and for loans raised by the Board was £8,981,000. The Board is still empowered to borrow £470,271 before reaching the limit of its borrowing powers.

(i.) *Total Cost of Water Supply and Sewerage, 1853 to 1910-11.* The subjoined table shows the total cost of construction and maintenance of water supply and sewerage from 1853 to 1911.

**MELBOURNE AND METROPOLITAN BOARD OF WORKS.—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 to 1911.**

Period.	Water Supply.		Sewerage.			Total
	Con- struction.	Main- tenance.	Con- struction.	Main- tenance.	Working Expenses.	
	£	£	£	£	£	£
1853 to 1890-1 ...	3,378,246	149,622	...	...	...	3,527,868
1890-1 to 1899-1900	322,627	146,678	3,026,162	*20,411	*21,286	3,537,164
1900-1 ...	14,330	18,445	280,973	13,287	11,240	338,275
1901-2 ...	16,053	20,786	302,460	10,906	13,430	363,635
1902-3 ...	10,412	21,480	311,615	12,047	14,495	370,049
1903-4 ...	8,649	20,765	293,602	12,696	13,860	349,572
1904-5 ...	1,391	16,105	425,137	4,750	21,929	469,312
1905-6 ...	16,562	15,539	340,386	5,242	23,338	401,067
1906-7 ...	25,119	17,731	277,820	4,652	21,180	346,502
1907-8 ...	33,058	23,004	262,148	4,075	31,149	353,434
1908-9 ...	65,108	22,163	220,900	3,962	31,806	343,939
1909-10 ...	29,962	22,999	283,827	4,589	33,495	374,872
1910-11 ...	92,731	23,474	242,731	5,103	41,800	405,839
Total	4,014,248	518,791	6,267,761	101,720	279,008	11,181,528

\* From the 30th June, 1897, to the 30th June, 1900.

(ii.) *Revenue and Expenditure of Melbourne and Metropolitan Board of Works.* The following table shews the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during each year from 1902-3 to 1910-11 inclusive:—

**MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1902-3 to 1910-11.**

Particulars.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
ORDINARY RECEIPTS.									
Water supply ...	£ 179,885	£ 167,036	£ 181,890	£ 186,179	£ 214,834	£ 229,674	£ 241,790	£ 248,356	£ 253,002
Sewerage ...	148,641	161,030	171,448	192,518	216,236	226,609	242,296	253,756	267,444
Live stock—Met. farm	35,568	28,970	38,559	42,078	47,349	39,132	22,153	31,289	35,016
In-terest { Water supply	17	19	...	...	20	129	15	138	830
{ Sewerage ...	18,605	25,037	26,988	23,785	20,635	16,562	15,929	10,229	8,995
Total ...	382,716	382,092	418,885	444,560	499,074	512,106	522,183	543,768	565,287

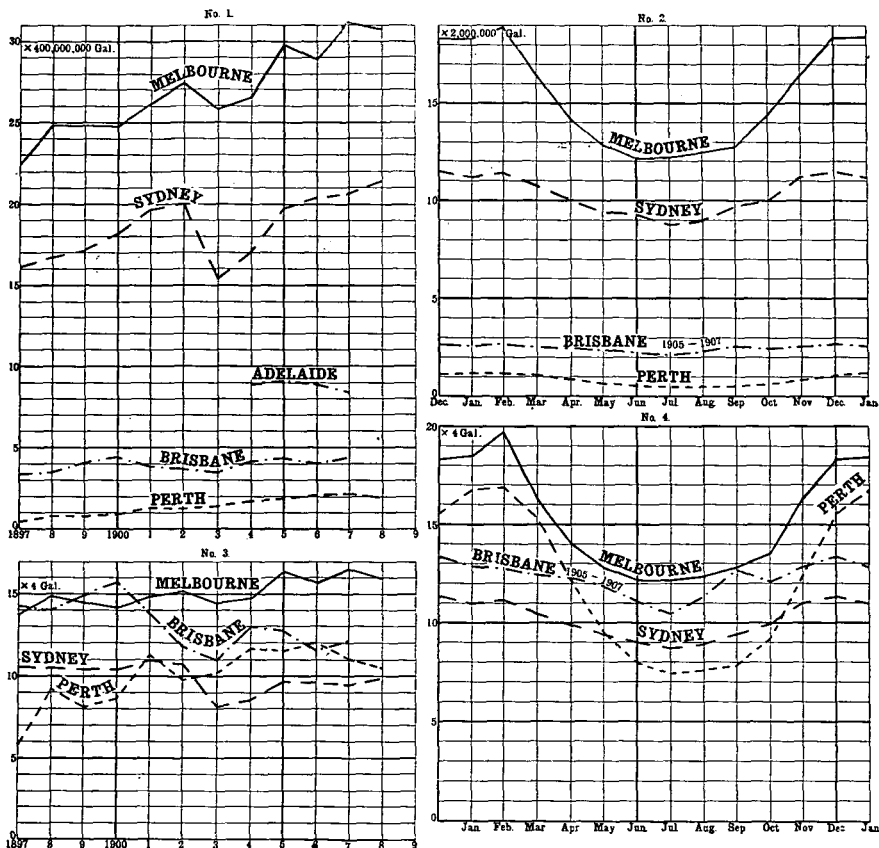
ORDINARY EXPENDITURE.									
General management	33,933	32,513	31,081	31,484	31,095	33,267	33,984	34,863	35,779
Live stock—Met. farm	25,718	23,345	23,985	29,050	47,276	41,536	20,316	17,900	19,336
Main-tenance { Water supply	22,980	21,990	20,035	20,079	21,523	25,018	24,643	24,944	25,016
{ Sewerage ...	26,590	26,655	26,833	25,765	53,214	35,588	38,016	42,921	45,665
In-terest { Water supply	102,959	104,114	101,939	102,081	101,628	101,044	102,297	101,578	105,760
{ New offices ...	...	...	932	932	932	...	...	...	...
{ Sewerage ...	206,964	226,861	239,929	257,059	263,410	270,130	280,647	286,655	293,608
Total ...	419,144	435,478	444,854	469,450	499,078	506,583	499,903	508,861	525,164

LOAN RECEIPTS.									
Water supply ...	2,855	2,103	1,583	1,937	2,492	6,725	2,435	5,272	4,788
Sewerage ...	87,664	88,164	96,588	84,020	79,088	72,415	67,771	61,509	56,313
Proceeds of loans	722,641	950,927	189,696	346,519	395,065	307,500	429,595	257,853	291,310
Miscellaneous	215	152	3,508	16,204	12,332	14,865	15,246	9,104	9,238
Total ...	813,375	1,041,346	291,375	448,680	488,997	401,505	515,047	333,758	361,649

LOAN EXPENDITURE.									
Water sup. construct'n	12,925	10,457	8,990	16,045	26,023	40,183	67,271	35,984	98,145
Sewerage construction	409,232	395,104	472,384	414,310	336,799	309,194	272,508	331,214	286,035
Expenses in floating & redemption of loans	25,773	528,561	7,360	67,533	160,163	34	229,189	2,677	2,936
Miscellaneous ...	19,050	20,116	3,417	12,780	8,670	16,655	24,961	18,002	26,288
Total ...	466,980	954,238	492,151	510,668	531,655	368,066	593,929	387,877	413,404

**7. Melbourne Metropolitan Water Supply.**—From the year 1835 to 1857 the inhabitants of Melbourne depended for their water supply entirely upon rainwater caught in tanks, or upon water carts filled from the River Yarra above the falls. In 1848 the city

GRAPHS SHEWING CONSUMPTION OF WATER IN METROPOLITAN AREAS.—  
MELBOURNE, SYDNEY, AND PERTH, 1897 TO 1908, AND BRISBANE, 1905 TO 1907



EXPLANATION OF GRAPHS.—No. 1.—Total annual consumption of water in metropolitan area 1897 to period shown on graph. In the Adelaide water districts there are no governing meters; the quantities shown are as recorded by gaugings taken at the reservoirs and include evaporation and absorption. The base of each small rectangle represents an interval of one year, and the vertical height represents 400,000,000 gallons.

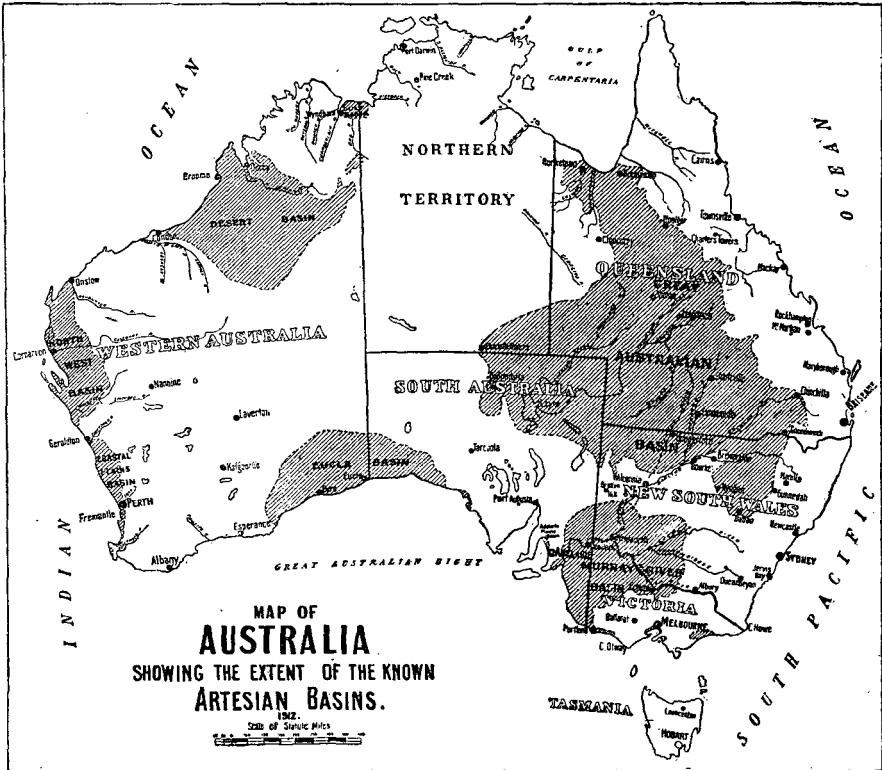
No. 2.—Average daily consumption of water in metropolitan area during each month of the year. (Mean of period 1897 to 1908.) The base of each small rectangle represents an interval of one month, and the vertical height represents 2,000,000 gallons.

No. 3.—Average daily consumption of water per head of population in metropolitan area, 1897 to 1908. The base of each small rectangle represents an interval of one year, and the vertical height represents 4 gallons.

No. 4.—Average daily consumption of water per head of population in metropolitan area during each month of the year. (Mean of period 1897 to 1908.) The base of each small rectangle represents an interval of one month, and the vertical height represents 4 gallons.

The information, while not quite up to date, covers the latest available period and gives, it is believed, a very fair approximation of the present conditions.

MAP SHEWING THE POSITION AND EXTENT OF THE "AUSTRALIAN  
ARTESIAN BASINS."



This map was prepared by the Interstate Conference on Artesian Water, held in Sydney during May, 1912. It contains the latest facts relative to the various artesian basins of the Australian continent. Of these basins the most important is the Great Australian Basin, which extends over 570,000 square miles, viz.:—About 376,000 square miles in Queensland, 90,000 square miles in South Australia, 83,000 square miles in New South Wales, and 20,000 square miles in the Northern Territory. The Murray River Basin extends over South-Western New South Wales, North-Western Victoria, and South-Eastern South Australia. The Western Australian Basins fall naturally within five groups, viz.:—The Eucla Basin, the Coastal Plains Basin, the North-West Basin, the Desert Basin, and the Gulf Basin. (See also pages 583 to 589.)



council appointed a committee to enquire into and report generally upon the water supply and sewerage of the city. This committee recommended that a comprehensive system of sewerage should be carried out, and a rate levied for that purpose; the stringent enforcement of provisions as to slaughtering stock and as to the removal of refuse; that the space between Melbourne and the beach be cleared so as to allow the free access of pure sea air; that a Building Act should be passed and that the streets should henceforth be formed of a uniform width. Most of these recommendations were carried out. A Building Act was passed in 1849, and the filthy lanes in the city were remade and drained. In 1845 the first proposal was made to supply the city with water, by means of a water-wheel to be worked by the Yarra Falls. Five years later a small steam engine was erected to pump water into a tank situated in Flinders Street, from which water was drawn by carts, and in 1851 an elaborate report was issued by the city surveyor, recommending a plan for the city water supply, which was soon afterwards adopted. The source from which it was proposed to conserve the water for the supply of Melbourne consisted of several creeks and springs which flow from Mount Disappointment, about thirty-two miles north of the metropolis, and which, when united, form the Plenty River; this scheme was adopted, and has resulted in the Yan Yean Reservoir scheme. In 1853 the duty of supplying water to the metropolis was transferred from the city council to the Commissioners of Sewers and Water Supply, and towards the end of the same year the work of construction of the Yan Yean system was commenced. On the 31st December, 1857, the first water was turned on by Major-General McArthur, acting for the Governor, Sir Henry Barkly, K.C.B.

(i.) *Development of System, 1857 to 1911.* The following statement shews the development which has taken place in the water supply system of Melbourne during the fifty-four years since its inception:—

#### MELBOURNE WATER SUPPLY SYSTEM, 1857 to 1911.

Year.	Served Population.*	Capital Cost.	Charge per 1000 Gallons.	Rate in £	Mains & Pipes, Mileage of—	Supply in Gallons, Averagedaily.
		£				
1857 ...	95,442	748,974	10/- and 6/-	1/-	104	3,250,000
1911 ...	594,250	4,014,248	1/-	7d.	1,376½	32,974,008

\* On the 31st December.

(ii.) *Description of Water Supply Systems.* The water supply of Melbourne consists of two main systems—the Yan Yean and the Maroondah.

(a) *The Yan Yean System* is the main source of supply. It commences by collecting the water from the Silvery and Wallaby Creek valleys, to the north of Mount Disappointment 2700 feet high, which forms one of the prominent heights of the main Dividing Range in Victoria. The waters of the Silvery Creek are brought by means of an aqueduct a little over eight miles long, constructed at a cost of £59,603, to a weir at the head of the Wallaby Creek aqueduct, which carries the combined waters of the two creeks for a distance of five and a quarter miles, and discharges over the crest of the Dividing Range at a height of 1694 feet above sea level, and then drops a height of 133 feet in 683 feet into Jack's Creek, one of the branches of the Plenty River. The Wallaby Creek aqueduct was constructed at a cost of £69,712. Its carrying capacity is 33,000,000 gallons a day, while the average daily flow of the combined Silvery and Wallaby Creeks is 12,000,000 gallons. From its drop into Jack's Creek the water follows the natural bed of the stream for about three miles to the Tourourrong

reservoir, which is a small reservoir of about thirty-six acres in extent, having a capacity of 60,000,000 gallons. From Tourourrong the Clear Water Channel carries the water for a distance of four and three-quarter miles to the old Plenty inlet channel of the Yan Yean reservoir. This channel is 13 feet 6 inches wide and 4 feet 6 inches deep, the section being a quadrant of a circle of 4 feet 9 inches radius, with one to one side slopes. The fall of this channel is 7 feet 6 inches to the mile, with a carrying capacity of 12,000,000 gallons per day. The cost of the Tourourrong reservoir and this channel was £77,952. In it there are waterfalls, the highest of which is 17 feet. The water from the old Plenty channel enters the Yan Yean reservoir through a spur, forming its western bank, by means of a tunnel 1000 feet long. The Yan Yean reservoir, which is twenty-two miles from the city, is formed by the construction of an earthen bank 49 chains long, 30 feet high, 20 feet wide on top, with a slope next the water of three to one, and an outside slope of two to one. The bywash is 5 feet below the top of the embankment, at a level of 602 feet above low-water mark in Hobson's Bay. The reservoir, when full, covers an area of 1560 acres, with a maximum depth of 26 feet, and an average depth of 18 feet. Its total capacity is 6,400,000,000 gallons, of which 5,400,000,000 gallons are available for consumption. From the Yan Yean reservoir to the Pipe Head dam at Morang, a distance of seven miles, an open aqueduct capable of delivering 33,000,000 gallons a day has been constructed. From the Morang reservoir, the bywash of which is 485 feet above sea level, a 30-inch cast-iron main, 27-inch cast-iron and a 30-inch wrought-iron main carry the water a distance of seven miles to the storage reservoir within the metropolitan area, at Preston. The No. 1 Preston reservoir is constructed partly in excavation and partly in bank; it is 20 feet deep, and holds 16,000,000 gallons. The bywash is 328 feet above the sea level, and the cost to 30th June, 1911, including scour main was £23,318. A second reservoir of 25,000,000 gallons capacity was built during 1908-9, the walls being of reinforced concrete with earth backing. These are the main distributing reservoirs of the central city supply.

- (b) *Maroondah System.* The water for this system is obtained from the Maroondah River, a tributary of the Yarra. The waters of the Graceburn are picked up by a small weir 686 feet above sea level, and carried for a distance of three-quarters of a mile in a concrete-lined channel to a well near the main road leading from Healesville to Marysville. From this well an 18-inch wrought-iron pipe, one and a quarter miles long, leads the water to the main Maroondah aqueduct. The creeks contributing to the flow in the Maroondah aqueduct, in addition to the Graceburn, are the Coranderrk, Donnelly's and Sawpit Creeks. In each case the water is conveyed by pipes into the main aqueduct from diversion weirs on the creeks. A temporary weir of Portland cement concrete has been constructed across the Maroondah River, from which point the water is led in an aqueduct forty-one miles long to the Preston reservoir, where it joins the water from the Yan Yean system. The channel, owing to recent improvements, is now capable of delivering 30,000,000 gallons daily, the cross section being a quadrant of three feet ten inches radius with one to one slopes and a fall of one foot to the mile. The valleys are crossed by wrought-iron syphons, and with the exception of the Plenty River, which is crossed on a wrought-iron girder bridge, all the syphons are laid under the beds of streams. Each syphon is provided with a scour pipe large enough to take the full flow of the aqueduct, enabling the water to

be directed down any of the natural watercourses when it becomes necessary to empty any length of the aqueduct for cleansing purposes. The total cost of the Maroondah system to 30th June, 1911, was £773,765.

(c) *High Level System.* Besides the Yan Yean and Maroondah systems, the high levels of the eastern suburbs of Melbourne are provided for by a direct main from the Yan Yean reservoir. This main is thirty-two inches in diameter, constructed of wrought-iron plates from  $\frac{1}{4}$  inch to  $\frac{7}{8}$  inch thick, 20 $\frac{1}{2}$  miles long, and cost to the 30th June, 1911, £199,576. The discharge is about 9,000,000 gallons per day. There is a storage reservoir of 9,000,000 gallons capacity at Surrey Hills, the by-wash of which is 480 feet above sea-level.

(d) *O'Shanassy Supply.* The O'Shanassy River is a tributary of the Yarra. It is proposed to divert the waters of this river, and to construct an open aqueduct and pipe line of an aggregate length of about 48 $\frac{1}{2}$  miles, delivering water by way of Mitcham. The watershed of the O'Shanassy River, containing 32,650 acres, has been excised from the permanent forests area and a crown grant was issued to the Board on the 28th January, 1910.

(iii.) *Catchment Areas, Reservoirs, and Aqueducts.* (a) *Drainage Areas.* The whole of the catchment areas are absolutely free from population or cultivation. The Government pursued the policy of gradually purchasing all private rights over the various watersheds, which policy the Board has carried on and completed; the original owners have been bought out, while the township of Fernshaw, in the Maroondah system, was entirely purchased and obliterated. The present drainage areas from which the water is delivered cover the following:—

	Silver and Wallaby Creeks.	Plenty River and Jack's Ck.	Yan Yean Reservoir Catchment.	Maroondah Catchment.	Total.
Area in acres	12,000	12,000	5,000	40,000	69,000

All the water is delivered by gravitation, no pumping being required in any portion of the area supplied.

(b) *Storage Reservoirs.* In connection with distribution there are eight service reservoirs having a total capacity of 73,000,000 gallons. From the Preston reservoirs, which form the main distributing point, a number of service mains lead into the reticulation system of the metropolis. The total daily quantity of water which can be sent into Melbourne is as follows:—

#### MELBOURNE WATER SUPPLY.—CATCHMENT AREA, 1911.

System	...	Yan Yean.	Maroondah.	High Level Main	Total Supply.
Gallons per day	...	33,000,000	30,000,000	9,000,000	72,000,000

(c) *Aqueducts.* Up to the 30th June, 1911, 203 miles 5 $\frac{1}{4}$  chains of 12 inch to 54 inch mains and 1092 miles 44 $\frac{1}{2}$  chains of reticulation mains, below 12 inch, had been laid, in addition to which there were 80 miles 72 $\frac{3}{4}$  chains of aqueducts and syphons, or a total length of aqueducts, mains, and reticulation pipes of 1376 miles 42 $\frac{1}{2}$  chains.

(v.) *Quantity of Water, Number of Houses, and Population Supplied.* The following table gives various particulars shewing the increase in the supply of water in Melbourne and suburbs from 1902 to 1911 inclusive:—

### MELBOURNE WATERWORKS.—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1902 to 1911.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year ended 30th June.	Average Daily Supply.		Rate Levied.	Assessments of Tenements Served by Metropolitan Water Supply.
					Per House.	Per Head of Estimated Population.		
	No.	No.	,000 Gallons.	,000 Gallons.	Gallons.	Gallons.		£
1902 ...	105,051	498,030	30,038	10,963,945	285.9	60.3	6d. in the £	3,650,573
1903 ...	106,176	502,120	28,469	10,391,163	268.1	56.7		3,830,872
1904 ...	107,701	503,560	28,997	10,612,929	269.2	57.6		4,004,543
1905 ...	109,393	507,960	32,657	11,919,957	298.5	64.3		4,061,258
1906 ...	111,494	515,080	31,680	11,563,244	284.1	61.5		4,060,890
1907 ...	114,049	524,770	34,157	12,467,384	299.5	65.1	7d. in the £	4,301,213
1908 ...	116,781	536,540	33,626	12,307,201	287.9	62.1		4,484,868
1909 ...	119,650	549,690	31,829	11,617,524	266.0	57.9		4,672,324
1910 ...	123,227	565,010	34,508	12,595,571	280.0	61.1		4,789,265
1911 ...	128,036	581,500	32,974	12,028,440	257.5	55.7		5,045,848

(vi.) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1854 to 1911.* The following table shews the total cost of construction, the revenue, expenditure, and net profits up to the 30th June, 1901, and for each financial year from 1902 to 1911 inclusive:—

### MELBOURNE WATERWORKS.—CONSTRUCTION, COST, REVENUE, EXPENDITURE, AND NET PROFITS, 1854 to 1911.

Year Ended the 30th June.	Capital Cost. <sup>1</sup>	Annual Revenue. <sup>2</sup>	Annual Expenditure on Maintenance and Management. <sup>3</sup>	Percentage of Expenditure to Revenue.	Interest.*	Net Profit after Payment of Expenditure and Interest.
	£	£	£	%	£	£
Total to 1901	3,715,203	4,835,242	788,346	...	2,042,856	2,004,040
1902 ...	16,053	171,889	40,156	23.36	102,670	29,063
1903 ...	10,412	169,295	40,257	23.78	102,942	26,096
1904 ...	8,649	165,457	37,374	22.59	104,096	23,987
1905 ...	1,391	184,529	31,761	17.21	102,465	50,303
1906 ...	16,562	182,926	28,016	15.31	102,548	52,362
1907 ...	25,119	211,059	30,573	14.49	102,075	78,411
1908 ...	33,058	233,549	41,656	17.83	100,915	90,978
1909 ...	65,108	235,238	41,776	17.76	102,281	91,181
1910 ...	29,962	248,189	43,147	17.38	101,440	103,602
1911 ...	92,731	243,744	44,290	18.17	104,930	94,524
Total ...	4,014,248	6,881,117	1,167,352	...	3,069,218	2,644,547

1. Works commenced in 1853. 2. Revenue commences in 1854. 3. Returns for expenditure commence in 1859. 4. First interest paid in 1856.

**5. Melbourne Sewerage.**—As stated above, the chief object of the creation of the Melbourne and Metropolitan Board was to carry out an efficient system of sewerage. Old Melbourne used to be a city of cesspits, and it was not until the latter sixties that these were abolished, filled up, and the movable pan system gradually adopted throughout the whole metropolitan area with night removal. The cost of removal in 1894 was about £90,000, equal to a capital expenditure of £1,750,000. This objectionable system has been displaced by the water carriage system throughout a large portion of the metropolis, and in other parts the work of reticulation is now proceeding. The sewerage system is designed to carry off all water used in water closets, lavatories, baths, and urinals,

together with all chamber slops and water used in cooking, washing clothes and floors, and from sinks in kitchens and sculleries, drainage from stables and cow houses, together with all liquid refuse, which in the opinion of the Board will not prejudicially affect the sewers, the machinery, or the sewage farm. Rainfall from the streets flows into the river and is not taken into the sewers, which are designed to provide for 30 cubic feet per head per day from the assumed future population, calculated on the basis of a population of 1,000,000 people ultimately settled on the areas now capable of being connected with the pumping station.

(i.) *Description of Sewerage Systems.* The whole of the sewage of the metropolis is being gradually collected by means of two principal main sewers and a subsidiary main leading to the pumping station at Spotswood.

The two main sewers are (a) *North Yarra System.*—The North Yarra sewer, which commences with Heidelberg (part of) and thence takes up East Kew, Preston, Coburg, Northcote, Brunswick, the Clifton Hill part of Collingwood, also Fitzroy and the North Carlton, North Melbourne, and Flemington and Kensington parts of Melbourne, together with Essendon and Footscray. (b) *South Yarra System.*—The Hobson's Bay main which starts with Moorabbin (part of), picking up Brighton, Caulfield, Malvern, St. Kilda, Camberwell, a small part of Nunawading, besides the remaining part of Kew, also Hawthorn, Prahran, South Melbourne, Port Melbourne, Richmond, the remaining part of Collingwood, also East Melbourne and other remaining parts of Melbourne. (c) The Subsidiary main, which takes in Williamstown and joins the Hobson's Bay main before it enters the pumping station.

On 30th June, 1911, the sewerage system had been practically completed in the following districts, viz.:—Port Melbourne, South Melbourne, Melbourne (except very small portions in Flemington and Kensington), Richmond, Prahran, Collingwood, Fitzroy, and very nearly the whole of St. Kilda, whilst the thickly populated portions of Brighton, Caulfield, Malvern, Camberwell, Kew, Hawthorn, Brunswick, Northcote, Essendon, Footscray, Williamstown, Coburg, Preston and Moorabbin had also been dealt with; also a small portion of Nunawading.

During the past twelve months a great deal of progress has been made in the work at Moorabbin, Coburg, Preston, Brighton, Kew, Malvern, Brunswick, Northcote, Essendon and Williamstown. Reticulation work is steadily extending outwards, while reticulation extensions of varying importance to provide for new buildings or fresh subdivisions are being carried out in various parts of the Metropolitan Area.

In all, 120 $\frac{3}{8}$  miles of main and branch sewers and 1157 $\frac{1}{4}$  miles of reticulation sewers have been completed. There were also 1757 miles of house connections drains laid (7 $\frac{3}{16}$  miles of cast iron and 1749 $\frac{3}{16}$  miles of vitrified stoneware pipes), under the supervision of the Board, or a total altogether of 3034 $\frac{1}{2}$  miles of mains, branches, reticulation sewers and house connections connected with the Spotswood Pumping Station.

The whole system was so far advanced on the 30th June, 1911, that on that date the sewage from 118,440 tenements could be collected. Of these, 112,293 tenements were connected, together with 44 public conveniences and 70 public urinals, 127,468 water closets, 91,679 baths, 69,314 sinks, 63,264 sets of wash troughs, 30,267 lavatories, 12,784 stables, 7572 urinals, 5175 polluted areas and paved yards, 1769 cellars, 932 slop hoppers, 290 latrines, and 254 dairies.

When collected at Spotswood the sewage is raised 125 feet to the head of the outfall sewer, through 2 $\frac{3}{4}$  miles of 6-foot and 4-foot wrought-iron rising mains, from whence it gravitates to the farm in a partly-open and partly-closed channel 15 $\frac{3}{4}$  miles long, eleven feet in diameter, and having a grade of two feet to the mile.

(ii.) *Metropolitan Sewage Farm.* The farm contains 8847 acres, situated on the western side of the Werribee River. The price paid for the land was £17 10s. per acre (including compensation for severance). The cost of the farm to the 30th June, 1911,

was £461,074. About 29,332,627 gallons of sewage had to be disposed of every twenty-four hours during the year in irrigating the fields. It is spread over properly-prepared and sown blocks of land by a series of mains and lateral carriers. The effluent, after filtering through the land, is discharged into Port Phillip Bay in a clear and transparent condition, all the sewage held in suspension being left in the soil. The main supply channels for carrying the sewage on to the fields are about ten chains apart, and a good system of open drains to carry off the surplus water is provided. Many of these drainage channels are ten feet to twelve feet wide at the top and seven feet deep, and through them the water drained off from the subsoil is constantly flowing to the bay. The prepared and sown blocks on the farm are laid down with grass and lucerne, on which sheep are depastured. During the financial year 1910-11, 22,313 sheep were bought, at a cost of £11,677, other expenses amounting to £3968. During the same period the total receipts from the sale of wool, skins, and 32,474 sheep amounted to £31,284. The profit on sheep for the year amounted to £9302. Number of cattle bought 943, costing £3347, other expenses being £672. Total receipts for sale of hides and 703 cattle amounted to £3732; the profit for the year was £1614.

(iii.) *House Connections.* The work of house connections with the sewerage system is carried out under a carefully prepared by-law. Under the Amending Act of 1897, after a property has been declared to be a sewered property, the owner has several options. (a) He may submit a plan of his house connections for approval, and on approval being given, may agree to carry out the work within one month. (b) He may submit a plan, for which, if approved of, he may ask for an estimate of the cost of carrying out. This the Board is bound to supply, and then the owner may either carry out the work himself or ask the Board to carry out the work, which it must do for the estimated price, whether the work costs less or more. (c) On default of the owner the Board may carry out the work, and at the request of the owner accept payment by forty quarterly instalments, bearing interest on such portion as from time to time remains unpaid at the rate of 5 per cent.

(iv.) *Number of Houses Connected, Capital Cost, Revenue and Expenditure, 1902 to 1911.* The following table gives particulars as to the number of houses connected to the sewerage system, the total capital cost, and the receipts and disbursements during each year from 1902 to 1911 inclusive:—

**MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST,  
RECEIPTS AND DISBURSEMENTS, 1902 to 1911.**

Year ended the 30th June.	Number of Houses Connected.	Capital Cost.	Receipts.*			Mainten- ance and Working Expenses.
			From Rates.	From other Sources.*	Total.	
	No.	£	£	£	£	£
1902	47,172	3,609,596	119,222	5,474	124,696	24,396
1903	55,929	3,921,208	141,994	6,647	148,641	26,590
1904	64,487	4,214,812	154,857	6,174	161,031	26,696
1905	71,689	4,639,949	165,500	5,948	171,448	26,906
1906	79,597	4,980,335	185,803	6,715	192,518	28,828
1907	87,853	5,258,156	209,805	6,431	216,236	33,296
1908	94,067	5,520,303	221,953	4,656	226,609	35,939
1909	99,955	5,741,203	233,595	8,701	242,296	38,016
1910	105,993	6,025,030	241,853	11,903	253,756	42,921
1911	112,293	6,267,761	255,972	11,472	267,444	45,665

\* Excluding revenue from sale of sheep and from interest.

9. **Water Supply in Country Towns and Districts.**—By the Water Act 1905, which came into operation on the 1st May, 1906, the control and management of all Irrigation Trusts, with one exception, and of a number of waterworks and water supply districts were centralised, and their works and property vested in the State Rivers and Water Supply Commission. The powers and duties of this Commission were extended by the Water Act 1909, the whole of the Water Supply Department being now merged in the Commission. Further information with regard to this Commission and to the works and districts under its control are given in the section in this book dealing with Water Conservation and Irrigation. There are, however, in different parts of Victoria a number of other waterworks which are concerned chiefly with domestic supply, and which are controlled by local authorities, *i.e.*, by Waterworks Trusts or by municipal corporations. These works are constructed out of moneys either granted or lent by the State Government. The following table gives particulars as to the waterworks under the control of Trusts and municipal corporations for each financial year from 1904 to 1911 inclusive :—

**VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1904 to 1911.**

Year.	Waterworks Trusts.						Municipal Corporations.*				
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.	Receipts.	Expenditure.	Number of Corporations.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.	
	No.	£	£	£	£	£	No.	£	£	£	
1904...	73	1,051,424	775,701	18,520	†	†	24	675,161	479,815	2,133	
1905...	74	1,068,985	786,505	19,520	71,654	71,976	23	669,438	471,938	8,107	
1906...	78	1,367,565	905,336	17,029	89,063	86,764	23	669,684	466,395	2,586	
1907...	84	1,406,510	933,033	22,351	93,247	88,671	23	674,366	468,462	9,786	
1908...	87	1,429,836	950,293	20,512	72,952	69,291	23	675,966	465,778	9,750	
1909...	83	952,486	731,276	16,130	85,054	88,190	23	676,358	461,881	9,834	
1910...	86	960,719	769,442	14,727	†	†	25	686,356	457,981	10,718	
1911...	87	1,017,396	819,698	15,047	†	†	21	651,489	421,273	2,662	

\* Particulars as to the receipts and expenditure in respect of waterworks under the control of municipal corporations are not available. † Returns not available.

Under the provisions of the Local Government Act 1903, municipal councils are authorised to construct and maintain tanks, dams, and reservoirs, and must maintain existing works for the gratuitous supply of water. They are also empowered to accept the management and control of new waterworks within their respective localities, and may, with the consent of the Governor, construct or purchase new works within or without their locality. Councils are also authorised to enter into contracts for the supply of water for any period not exceeding ten years with the owners of any waterworks. Every municipality may levy a special water rate for water supplied, or for the purpose of constructing waterworks or paying the interest on any loan contracted by the council for such purpose, but the amount of the rate must not exceed in any year the sum of two shillings in the pound, provided that a minimum sum of ten shillings may be fixed by the council to be paid in respect of any property at which water is supplied.

(i.) *Geelong Waterworks Trust.*—(a) *Constitution.* Constituted under The Geelong Municipal Waterworks Act 1907, with borrowing powers up to £300,000, and further increased by Act No. 2322, 1911, to £350,000. Reconstituted under Geelong Waterworks and Sewerage Act, 1910, with power to borrow an additional £250,000 for the purpose of installing a sewerage system for Geelong and suburbs.

(b) *Water Supply.* The available storage capacity of the reservoirs is 1353 million gallons, and the Trust is authorised to supply water to (a) City of Geelong; (b) the suburbs thereof, and all places within a radius of five miles of the Geelong Post Office; and (c) any place within ten miles on either side of the main pipe from Stoney Creek to Geelong.

(c) *Sewerage.* The sewerage scheme provides for a main outfall sewer 4 ft. 3 in. x 3 ft. 3 in. to the ocean at Black Rock—a distance of about nine miles. The scheme will embrace an area of 8081 acres, including the City of Geelong, Boroughs of Newtown and Chilwell, and Geelong West, and the suburban areas situated in Corio and South Barwon Shires.

10. **Fire Brigades.**—Under the Fire Brigades Act of 1890 a metropolitan fire district and nine country fire districts were established, the former being placed under the control of a Metropolitan Fire Brigades Board, and the latter under the control of a Country Fire Brigades Board.

(i.) *Metropolitan Fire Brigades Board.* The metropolitan fire district originally comprised the area included in the several municipalities within a radius of ten miles from the Melbourne General Post Office, but this area has since been extended in certain directions so as to include the greater part of the Shire of Moorabbin and also the township of Mordialloc. The Board is composed of nine members, of whom three are appointed by the Governor-in-Council, three by the municipal councils, and three by the insurance companies. On the 31st December, 1911, the Board had under its control 50 stations, 213 permanent men, 152 auxiliary firemen, 26 special service firemen, 10 steam fire engines, 5 gasolene engines, 2 chemical engines (1 motor), 2 petrol motor fire engines, 106,882 feet of hose, and 197 fire-alarm circuits having 705 street fire-alarms, of which 618 contained telephones. The total length of wire in use outside stations for fire alarms and telephones is about 400 miles.

(ii.) *The Country Fire Brigades Board.* This Board consists of nine members, of whom three are appointed by the Governor-in-Council, two are elected by the municipal councils of the districts where there are brigades registered under the Board, two by the fire insurance companies, and two by the registered fire brigades. At the end of the year 1911 there were ninety-four municipal councils and fifty-five insurance companies included in the operations of the Act. All the brigades are volunteer brigades, but in the large towns permanent station-keepers and watchmen are employed. There were 115 registered brigades and 2146 registered firemen at the end of the year 1911. At the same date the plant consisted chiefly of 5 steam engines, 63 manual engines, 11 horse brakes, 61 apparatus carriages, 3 fire escapes, about 260 hose reels, and 150,000 feet of canvas hose.

(iii.) *Financial Operations of both Boards.* The following table gives particulars as to the financial operations of both Boards during each year from 1905 to 1910 inclusive:—

**VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN AND COUNTRY FIRE BRIGADES BOARDS, 1905 to 1910.**

Particulars.	1905.	1906.	1907.	1908.	1909.	1910.
ORDINARY RECEIPTS.						
Contributions ... ..	£ 49,083	£ 50,937	£ 51,934	£ 65,591	£ 64,347	£ 56,993
Receipts for services ... ..	754	551	1,336	2,833	2,908	3,106
Interest and sundries ... ..	3,442	3,080	3,116	2,562	1,649	2,884
Total ... ..	53,279	54,568	56,386	70,986	68,904	62,983



VICTORIA —REVENUE AND EXPENDITURE OF METROPOLITAN AND  
COUNTRY FIRE BRIGADES BOARDS, 1905 TO 1910—(continued).

Particulars.	1905.	1906.	1907.	1908.	1909.	1910.
ORDINARY EXPENDITURE.						
Salaries ... ..	24,793	25,316	27,411	30,062	35,325	37,913
Fire expenses ... ..	2,990	3,041	3,201	3,080	3,107	504
Horses, quarters, etc. ... ..	10,930	9,596	9,986	12,894	11,636	5,144
Plant—Purchase and repairs ... ..	4,589	6,560	5,783	9,478	6,343	2,955
Interest ... ..	6,103	5,752	5,803	5,822	5,781	5,775
Sinking fund ... ..	2,250	2,250	2,895	2,895	2,250	2,000
Miscellaneous ... ..	2,108	4,310	2,884	5,610	5,072	8,704
Total ... ..	53,763	56,825	57,963	69,841	69,514	62,995
LOAN EXPENDITURE—						
Purchase of land, erection of buildings, etc. ... ..	405	3,250	2,623	244	3,203	72

11. **The Melbourne Harbour Trust.**—This Trust was constituted under an Act passed in 1876, as a result of public agitation and demands extending over a period of thirty-four years, to the effect that the cost of landing goods should be reduced, and the delays in receiving goods should be abolished. Both demands arose from the fact that vessels of a draught greater than twelve feet had to discharge in the bay into lighters.

(i.) *Constitution of the Trust.* The Harbour Trust Act was drafted on the lines of similar institutions in Great Britain, such as the Thames Conservancy, the Mersey Harbour Board and the Clyde Trust. Under the Act of 1876, as amended in 1883, the number of Commissioners is fixed at seventeen, nominated or elected as follows:—Five were nominated by the Governor-in-Council, three elected by merchants, three by ship-owners, two were elected by the City Council, and one each by the ratepayers of South Melbourne, Port Melbourne, Williamstown, and Footscray. The sum of £1700 per annum was set aside for the remuneration of the Commissioners.

(ii.) *Works Undertaken by Trust in the River and in the Port.* In 1879 a report dealing with various propositions for the improvement of the port and harbour was issued by Sir John Coode, an English engineer, who had been engaged by the Commissioners for the purpose. This report, which recommended (i.) the cutting of a new channel through the flats to the south of Fishermen's Bend, (ii.) the construction of a dock, and (iii.) the widening and deepening of the channel in the river, was adopted by the Commissioners, who were empowered in 1883 to borrow the amount of £1,000,000 for the purpose of carrying out the necessary works. In 1890 a Consolidating Act was passed, and the borrowing powers of the Trust were increased to £2,000,000. The river was widened from Queen's Bridge to the bay to about 300 feet, while the depth has been gradually increased until at the present time it is twenty-six feet at low water. Five and-a-quarter miles of wharves carrying sheds which measure a total length of 12,870 feet, and cover an area of 614,180 square feet, have been constructed along the river and at the Victoria Dock, Melbourne.

(a) *The Coode Canal.* In 1886 the canal across the flats below Fishermen's Bend was completed at a cost of £96,000. The length of the canal is 2602 yards, the distance from Queen's Bridge to the river entrance being thereby reduced from seven miles to five and three-quarter miles, and the navigation being greatly facilitated. At the present time this channel, which is called the Coode Canal, is being widened 100 feet, which will make its total width 408 feet, and its width at low water 366 feet. The work of widening the canal is still in progress.

(b) *The Victoria Dock.* This dock, four miles up the river and opened in 1892, has an area of ninety-six acres and a depth of twenty-six feet at low water. The entrance to the dock is 160 feet wide. There are 8800 feet of wharfage, and the total cost, including wharves, sheds, and approaches thereto, was £416,038. The sheds have a total length of 3460 feet, and cover an area of 283,380 square feet.

(iii.) *Works in the Bay.* Prior to 1889 all the mail steamers and vessels of heavy draught had to lie at anchor in the bay, and there discharge into lighters. One of the first works undertaken by the Commissioners was to make the railway piers at Williams-town available to these vessels. This work was completed at a cost of £256,160. In 1893 a channel over 8000 feet long and 600 feet wide was constructed, running in a southerly direction from Port Melbourne Railway Pier and having a navigable depth of thirty feet o.l.w. The cost of this work was £218,379.

(iv.) *Dredging.* The total quantity of material raised by the dredging and excavation done in the improvement of the river and bay amounts to about 42 million cubic yards.

During the ten years ending 31st December, 1911, the average cost of dredging per cubic yard was 2.73 pence and the cost of towing and depositing 3.91 pence, not allowing for depreciation of plant. The Trust has expended £225,458 in reclaiming land within its jurisdiction. The amount of material raised annually is now about 1,200,000 cubic yards.

(v.) *Financial Operations.* The revenue of the Trust is obtained from wharfages, and quayage rates, rents and license fees from lands and ferries, and other license fees. One-fifth of the revenue of the Trust is paid to the consolidated revenue of Victoria. The following table gives particulars of the revenue and expenditure of the Trust from 1906 to 1911 inclusive:—

#### MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1906 to 1911.

Particulars.				1906.	1907.	1908.	1909.	1910.	1911.
REVENUE.									
				£	£	£	£	£	£
Rates and rents	...	...	...	254,142	257,787	272,409	259,641	316,787	332,732
Interest	...	...	...	2,987	2,949	3,662	90	410	2,039
Recoups	...	...	...	2,535	5,542	1,068	3,082	2,138	4,654
Total	...	...	...	259,664	266,278	277,139	262,813	319,335	339,425

## MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE—(contd.)

Particulars.	1906.	1907.	1908.	1909.	1910.	1911.
EXPENDITURE.						
	£	£	£	£	£	£
Wharfage refunds ...	796	783	1,161	997	1,618	1,097
Consolidated revenue of Victoria	51,204	51,565	53,869	51,612	62,604	65,413
Maintenance and management	52,519	53,741	70,224	54,962	56,794	58,987
Interest on loans ...	86,530	86,375	81,413	72,517	69,409	69,366
Dredging (construction) ...	7,182	8,163	9,162	16,368	25,200	31,932
Wharf ...	1,021	12,345	4,942	5,146	6,308	22,656
Other Harbour improvements ...	...	4,999	4,522	7,724	9,880	787
Plant account ...	...	11,310	13,753	11,887	860	21,935
Redemption of loans expenses ...	...	...	603	1,794	...	...
Total ...	199,252	229,281	239,649	223,007	232,673	272,173
PROFIT.						
Profit ...	60,412	36,997	37,490	39,806	86,662	67,252

## § 4. Queensland.

1. **Development of Local Government Systems.**—The first step in the direction of local government in Queensland was the incorporation of Brisbane as a municipality by proclamation on the 6th September, 1859, about three months prior to the separation of that State from New South Wales. The provisions of the Municipalities Act, which was passed in the mother colony in 1858, and which has already been referred to, applied to settlement in the Moreton Bay district, and were amended by an Act of the Queensland Government in 1861. Three years later the provisions of these two Acts were amended and consolidated, and authority was given for the incorporation as a municipality of any city or town, or of any rural district, on petition to the Governor signed by at least 100 resident householders. The duties and powers of the councils were extended and additional privileges were conferred under this Act.

(i.) *Inauguration of General System of Local Government.* Various amendments were made in the law from time to time, without, however, altering the main features of the Act of 1864, until the year 1878, when the Local Government Act was passed, amplifying the powers of municipalities, and providing for the incorporation of rural areas as shires. The provisions of this Act, which were adopted from the then new Local Government Act of Victoria, were found to be unsuited to the requirements of a large and sparsely populated country like Queensland, and were not applied to any new area. The Act was therefore only of practical value to a few of the existing municipalities. In 1879 the Divisional Boards Act was passed. This Act was intended to provide for local government outside the boundaries of municipalities, and was applied simultaneously by the Executive to about 660,000 square miles of territory, which was divided, by proclamation, into seventy-two divisions, some of them of immense area and carrying only a very small population. The Act provided to any division a free grant equal to one shilling in the pound of the annual value, and also for endowment to the amount of £2 for every £1 of rates collected for a period of five years. In case of the failure of the people of any division to elect the first members of their Board, the appointments were made by the Governor-in-Council. On the 30th April, 1880, a Gazette was issued first announcing the personnel of the elected Boards, and then appointing the members of the nominated Boards.

In 1881 and 1887 the Divisional Boards Act was amended, and by a further amending Act, passed in 1890, the rates thenceforward were to be charged on the unimproved capital value of the land, and this system has since been retained. In 1896 a commission was appointed to enquire into the working of the Local Government Acts and to recommend amendments which might be considered desirable; a report subsequently sent in by this commission recommended that increased powers of local government should be granted in certain matters, and to the report was appended a draft bill which, with certain alterations and curtailments, became the Local Authorities Act of 1902, the provisions of which, together with the amendments in 1903 and 1905, now regulate generally the working of local government within the State.

(ii.) *The Local Authorities Act 1902 and 1910.* Considered generally, these Acts comprise the Local Government Act 1878, and amending Acts, together with the Divisional Boards Act of 1887, the Valuation and Rating Act of 1890, and the Local Authorities (Joint Action) Act of 1886. They do not, however, comprise all the statutes relating to the powers and duties of local authorities, for certain Acts, such as the Tramways Acts and the Health Acts, while conferring powers upon these bodies, deal also with other subjects, and are in the nature of general Acts upon these subjects. The Act of 1902 contains a number of provisions enlarging the powers of local bodies and rendering their duties more explicit; thus the jurisdiction of councils with respect to roads, bridges, wharves, ferries, and reserves is amplified, and provision is inserted for putting under their control, when circumstances warrant it, such public lands as cemeteries, commons, foreshores, and the like. They have enlarged powers as to traffic, the eradication of noxious weeds, the reclamation of lands, the destruction and prevention of pests, the construction of buildings, the prevention of fires, and the control of places of public resort and amusement. They are empowered to establish works for lighting, etc., and to construct tramways in districts and under circumstances to which the existing Tramways Acts are not readily applicable. The proper execution of all these matters requires additional rating, and provision is made therefor in the Act.

**2. Systems of Local Government now in Operation.**—The principal features of previous enactments as to the division of the State into local areas are retained in the Acts of 1902 and 1910, but such areas are in future to be of two classes—(a) towns and (b) shires. All municipalities formerly constituted as boroughs become towns, except Brisbane, Rockhampton, and Townsville, which are declared to be cities, and all shires and divisions become shires. The Governor-in-Council may, after giving notice in the *Gazette*, constitute, unite, divide, or abolish areas for the purpose of forming new areas, and may by proclamation constitute a town a city.

(i.) *The Municipal Council.* All local areas are governed by councils, the members of which are called aldermen in the case of towns and councillors in the case of shires. *Town councils* are composed of either seven, nine, or eleven members, as declared by Order-in-Council, but if the town has wards three members are assigned to each ward. *Shire councils* are composed of five, seven, or nine members, as declared by Order-in-Council, but if the shire is divided the number cannot be more than three for each division, and need not be the same for every division.

(ii.) *Qualification of Aldermen and Councillors.* Every male ratepayer of the age of twenty-one years, if a natural-born or naturalised subject, is qualified to be elected as a member of a council, unless he is an uncertificated insolvent, is undergoing imprisonment, is (subject to certain exceptions) financially interested in any contract with the council, or is insane. Provision is made for the election of the mayor or chairman, and for the retirement of members by rotation. The first council of a newly constituted town is elected, but that of a newly constituted shire is appointed by the Governor-in-Council, unless otherwise directed by the order constituting the shire.

(iii.) *Qualification of Voters.* Generally every person of either sex of the age of twenty-one, who is a natural-born or naturalised subject, and is rated as an occupier or owner of ratable land, is entitled to vote. The number of votes depends upon the value of the land in the following scale:—

#### QUEENSLAND MUNICIPALITIES.—PLURALITY OF VOTES.

Value of land	...	Less than £500.	From £500 to £1000.	£1000 and upwards.
Number of votes	...	1	2	3

In case of joint owners or occupiers, each is to be considered the owner or occupier of land of a value equal to that of the whole divided by the number of owners or occupiers not exceeding three. If more than three persons are joint owners or occupiers, those whose names stand first on the rate book or valuation or return are to be taken. Companies may nominate their secretaries, managers, or directors for the purpose of voting.

(iv.) *Powers and Duties of Councils.* Generally the council is charged with the construction, maintenance, and management of all roads, streets, bridges, culverts, ferries, wharves, jetties, and other necessary public works, and is invested with powers to acquire land and buildings in connection with a variety of public works and for a number of public purposes. The council also has general power to make by-laws with a view to the good government of the local area under its management. Authority is given to the councils to establish markets and weighbridges and to fix dues for the use of the same; to undertake the manufacture or supply of light or hydraulic or other power; to destroy noxious weeds; and to control the erection of new buildings and the repair of dangerous or neglected ones. The council may also make by-laws with respect to a multitude of matters mentioned with great particularity in a schedule to the Act, and may also exercise various powers conferred by a number of Acts, set forth in the second schedule, such as the Tramways Act 1882, the Water Authorities Act 1891, the Electric Light and Power Act 1896, and the Health Act 1900.

(v.) *Valuation.* All land is ratable except the following:—Crown land unoccupied or used for public purposes; land in the occupation of the Crown, but this does not include lands rented in towns by the Crown; land used for public purposes; commons; cemeteries; and land not exceeding in area fifty acres and used exclusively for public worship, educational purposes, an orphanage, or library. Generally the value is estimated at the fair average value of unimproved land of the same quality held in fee-simple in the same neighbourhood. In the case of land held under gold-mining lease, or under lease from the Crown, the value is deemed to be a sum equal to twenty times the annual rent.

(vi.) *Rates* are levied on the unimproved capital value, and are of two kinds, general and special. *The general rate* must not be greater than sixpence in the pound, nor less than a half-penny, while *special rates* must not exceed threepence in the pound, but this provision does not include separate rates, special water rates, loan rates, cleaning rates, or tramway rates. Special rates may be levied for the purpose of constructing and maintaining permanent works, while separate rates may be declared for defraying expenses incurred in the execution of a work for the special benefit of any particular part of the area. A special rate may also be levied for the administration of the Health Acts.

(vii.) *Loans.* Money may be borrowed by local authorities either from the central Government, from outside sources by means of debentures, or by way of overdraft of current account. (a) *Government Loans.* The total amount that may be advanced by the Treasury, inclusive of sums owing, may not exceed a sum equal to five times the then ordinary annual revenue of the local authority, except in the case of loans for reproductive undertakings, for which special arrangements may be made by application to the Governor-in-Council. Notice of a proposed loan must be published, and, if demand be made by any ratepayers, having in the aggregate twenty votes, a poll must be taken to decide whether the money shall be borrowed or not. (b) *Debentures.* A local authority

may apply to the Governor-in-Council for permission to borrow money by the sale of debentures, but application must only be made after a resolution for borrowing the money has been adopted and confirmed, and after an opportunity has been given for the taking of a poll on the question, and (if a poll has been taken) when the result is in favour of the loan. (c) *Temporary Loans* from banks may be made by way of overdraft of the current account, but no such overdraft may exceed the ordinary revenue of the local authority in the year then last past.

(viii.) *Tramways.* Any ratepayers, having not less than one-third of all the votes of the ratepayers within any particular area, may by petition request the local authority to apply to the Governor-in-Council for the constitution of such area as a "tramway area." After an opportunity for taking a poll on the question has been given, and when the result is in favour of the tramway, the petition may be granted by the Governor, who may authorise the issue of a Government loan for the purpose of constructing or for purchasing the tramway. The total amount advanced for the purpose must not exceed £3000 for every mile constructed. As regards the repayment of tramway loans, the local authority may levy a tramway rate, and the provisions of the Local Works Loans Acts 1880 to 1889 are incorporated. Up to the end of the year 1910 tramways had been constructed under these provisions in seven shires, their total length being 208½ miles, 44 miles of which have since been taken over by the Government. In some cases these lines are run by the Queensland Railway Commissioner on behalf of the constructing authority. Particulars as to the working of tramways run by local authorities are given in the section in this book on "Roads and Railways." (See pp. 740-1 hereinbefore.)

**3. Area, Population, Number of Dwellings, Rates, Assets and Liabilities of Cities, Towns, and Shires, 1906 to 1910.**—The following table gives particulars of the area, population, number of inhabited tenements, assets and liabilities of cities and towns and of shires, for each year from 1906 to 1910 :—

**QUEENSLAND.—PARTICULARS OF CITIES AND TOWNS AND SHIRES, 1906 to 1910.**

Year.	Municipality.	Area.	Population.	Number of Inhabited Dwellings.	Capital Value.	Assets.	Liabilities.		
							Government Loans.	Other.	Total.
		Square Miles.	No.	No	£	£	£	£	£
1906	Cities and Towns	354	227,106	43,457	13,980,737	1,292,040	330,515	656,569	987,084
	Shires ...	669,901	306,212	68,211	29,197,898	254,363	113,550	45,199	158,749
	Total	670,255	533,318	111,668	43,178,545	1,546,403	444,065	701,768	1,145,833
1907	Cities and Towns	354	231,861	43,864	13,840,010	1,296,743	325,685	637,196	962,881
	Shires ...	669,901	318,336	66,984	29,977,860	259,519	100,951	44,525	145,476
	Total	670,255	550,197	110,848	43,817,870	1,556,262	426,636	681,721	1,108,357
1908	Cities and Towns	354	236,388	45,430	13,745,293	1,372,525	279,194	745,300	1,024,494
	Shires ...	669,901	333,619	70,294	31,279,792	277,086	111,754	52,908	164,662
	Total	670,255	570,007	115,724	45,025,085	1,649,611	390,948	798,208	1,189,156
1909	Cities and Towns	384½	241,795	45,365	13,637,273	1,366,435	253,391	815,540	1,068,931
	Shires ...	669,870½	344,752	73,480	33,677,538	301,976	111,740	53,643	165,383
	Total	670,255	586,547	118,845	47,314,811	1,668,411	365,131	869,183	1,234,314
1910	Cities and Towns	364½	247,435	44,804	13,774,440	1,406,521	242,924	767,481	1,010,405
	Shires ...	669,890	358,085	76,803	36,023,390	331,362	116,456	50,882	167,338
	Total	670,254½	605,520	121,607	49,797,830	1,737,903	359,380	818,363	1,177,743

4. **Receipts and Expenditure of Cities, Towns, and Shires, 1906 to 1910.**—The following table shows the receipts and expenditure (including loan moneys) of cities and towns and of shires, as well as the total receipts and expenditure of all municipalities, for each year from 1906 to 1910:—

**QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES, TOWNS, AND SHIRES,  
1906 to 1910.**

Year.	Municipality.	Receipts.				Expenditure.					
		From Government.	From Rates.	From other Sources.	Total.	On Public Works.	Loan Redemption.	Office Expenses and Salaries.	Other Ex-penses*.	Total.*	
		£	£	£	£	£	£	£	£	£	
1906	Cities and Towns	4,699	217,168	62,571	284,438	161,149	28,143	24,006	72,541	285,839	
	Shires ...	6,915	170,617	20,818	198,350	131,571	23,211	33,359	27,580	215,721	
	Total ...	11,614	387,785	83,389	482,788	292,720	51,354	57,365	100,121	501,560	
1907	Cities and Towns	10,824	226,948	52,037	289,809	173,887	13,651	24,303	73,198	285,039	
	Shires ...	5,813	187,397	26,249	219,459	141,252	12,594	34,311	31,500	219,657	
	Total ...	16,637	414,345	78,286	509,268	315,139	26,245	58,614	104,698	504,696	
1908	Cities and Towns	11,352	233,622	57,550	302,524	196,754	17,596	25,014	71,788	311,152	
	Shires ...	23,646	202,722	30,146	256,514	187,346	12,281	33,810	37,251	270,688	
	Total ...	34,998	436,344	87,696	559,038	384,100	29,877	58,824	109,039	581,840	
1909	Cities and Towns	6,891	247,433	66,138	320,462	146,721	17,459	24,668	142,249	331,097	
	Shires ...	16,648	222,536	32,235	271,419	152,700	13,332	37,585	51,194	254,811	
	Total ...	23,539	469,969	98,373	591,881	299,421	30,791	62,253	193,443	585,908	
1910	Cities and Towns	16,775	278,300	68,296	363,371	222,203	18,581	25,891	92,188	358,863	
	Shires ...	23,285	253,398	37,295	313,978	209,466	12,147	39,092	44,405	305,110	
	Total ...	40,060	531,698	105,591	677,349	431,669	30,728	64,983	136,593	663,973	

\* Including interest on loans.

5. **The Metropolitan Water and Sewerage Board.**—This Board was constituted by the Metropolitan Water and Sewerage Act 1909, which divested the then existing Water Board of its powers and duties and vested them in an extended form in the new Board. The Act further empowers the Board to carry out a sewerage and drainage system, and relieves the Local Authorities of their responsibilities in that matter. The district of the new Board will comprise the cities of Brisbane and South Brisbane, the towns of Hamilton, Ithaca, Toowong, and Windsor, and the shires of Balmoral (except division 3), Coorparoo, Enoggera (except division 3), Sherwood (except division 1), Stephens, Taringa, and Toombul.

The Board consists of nine members, viz., the president and eight elected colleagues.

(i.) *Brisbane Water Supply.* The supply is derived from the upper reaches of the Brisbane River, and from two storage reservoirs, known respectively as the Enoggera and the Gold Creek reservoirs. For some years after the constitution of Brisbane as a municipality in 1859, the city supply was drawn from a chain of water-holes and sold to the residents. This scheme was later superseded by another under which water-carriers were licensed. Later, again, the Board of Water Supply was constituted, and the

construction of the Enoggera reservoir by the damming of Enoggera Creek was commenced in 1864 and completed in August, 1866. This was followed in 1885 by the construction of the Gold Creek reservoir, which provided an improved service and better water. In April, 1892, the works at Mount Crosby, at the head of the Brisbane River, were completed. At these works the water is pumped to a reservoir 455 feet above Brisbane high-water mark, whence it is delivered to the city by gravitation. Works for increasing and purifying the water supply of Brisbane are to be carried out in the near future.

(ii.) *The Brisbane River Supply.* This is the principal source of supply, about 60 per cent. of the water used being taken from it. The catchment area above the pumping station is about 4000 square miles. The Mount Crosby service reservoir, into which the water is pumped from the river, is built in cement concrete, and is 267 feet long, 100 feet wide, and 15 feet deep from high-water line, which is 455 feet above high-water mark at Brisbane. The capacity is about 2,500,000 gallons. The outlet pipe is thirty-four inches in diameter, and leads through the valve-house to the gravitation main to Brisbane,  $17\frac{3}{4}$  miles long and twenty-four inches in diameter. At Kenmore, eleven miles from Mount Crosby, a junction is effected between this 24-inch main and the 16-inch main from Gold Creek.

(iii.) *The Enoggera Reservoir.* The Enoggera works are the oldest now in use, and are distant from Brisbane about eight miles by road. The catchment area is nearly thirteen square miles in extent, and the reservoir, which is formed by an earthen dam, holds 1,000,000,000 gallons, of which 600,000,000 are available by gravitation. The greatest length of the reservoir is 2600 yards, and its greatest breadth 700 yards. There are two lines of pipes from the reservoir to Brisbane—sixteen inches and twelve inches in diameter. The total carrying capacity of these pipes is about 2,600,000 gallons a day.

(iv.) *The Gold Creek Reservoir.* This reservoir is situated in the upper waters of Gold Creek, a branch of Moggil Creek, distant from Brisbane by road about thirteen miles. The supply is drawn from a catchment area adjoining that of Enoggera, and comprising an area of nearly four square miles. The total capacity is about 406,000,000 gallons, of which 400,000,000 gallons are available. The diameter of the service main is sixteen inches, the distance from the valve house to Brisbane being  $12\frac{1}{2}$  miles. The greatest length of the reservoir is 1650 yards, and its greatest breadth 682 yards.

(v.) *Service Reservoirs.* (a) *Highgate Hill Reservoir.* This reservoir was constructed in 1889 to supply parts of South Brisbane. Its capacity is 2,176,000 gallons. To fill this reservoir, and in order to ensure a good water supply to the south side generally, an inverted syphon, sixteen inches in diameter, was laid under the Brisbane River between Toowong and West End in 1889. The syphon is 800 feet long, and is connected with both the Mount Crosby and Gold Creek mains. (b) *Wickham Terrace Reservoirs.* Two service reservoirs are constructed on Observatory Hill, Wickham Terrace, for the supply of the lower parts of North Brisbane. They are supplied from the Enoggera reservoir through a 12-inch main, the water being aerated as it enters into the reservoirs, which together hold 570,000 gallons. (c) *Bartley's Hill Reservoir.* This reservoir was built in 1907 to increase the supply to the Hamilton, Clayfield, and Nundah districts. Its capacity is 1,367,256 gallons, top water level 250 feet above high-water spring tides. It is supplied from the Mount Crosby reservoir through a 12-inch main. All the service reservoirs are roofed over.

(vi.) *Brisbane Waterworks: Cost, Revenue, Expenditure, and Interest, 1902 to 1911.* The subjoined table gives particulars as to the cost, the revenue and expenditure, and the amount of interest and loan redemption during each year from 1902 to 1911 inclusive:—



**BRISBANE WATERWORKS.—COST, REVENUE, EXPENDITURE, INTEREST, AND  
REDEMPTION OF LOANS, 1902 to 1911.**

Year.	Capital Cost.	Revenue from Rates and Sales of Water.	Working Expenses.	New Work Construction.	Interest and Redemption of Loans.
	£	£	£	£	£
1902 ...	711,178	60,917	19,305	18,168	26,716
1903 ...	727,311	62,435	18,917	17,429	26,716
1904 ...	740,618	63,338	23,888	13,244	26,716
1905 ...	751,477	65,584	25,606	10,860	26,716
1906 ...	*774,921	67,280	19,255	23,444	26,716
1907 ...	792,264	69,709	20,025	17,343	26,716
1908 ...	811,055	69,493	22,125	18,791	26,716
1909 ...	825,812	69,736	25,246	14,756	26,716
1910 ...	867,837	72,006	26,097	42,025	27,754
1911 ...	1,015,276	67,730	30,105	147,438	20,670

\* The book value of the works at the end of 1907 was £569,770, the difference being amounts written off for depreciation, losses through floods, or the removal of smaller mains.

(vii.) *Brisbane Waterworks: Length of Mains, Tenements and Population Served, and Water Consumption, 1902 to 1911.* The following table shows the length of mains, the number of tenements connected, the population supplied, the total quantity of water supplied, the average daily supply, and the average daily supply per head of population supplied during each year from 1902 to 1911 inclusive:—

**BRISBANE WATERWORKS.—PARTICULARS, 1902 to 1911.**

Year.	Length of Reticulation Mains.	Number of Tenements Connected.	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Sup- ply per Head of Estimat'd Population.
	Miles.	No.	No.	,000 Gallons.	Gallons.	Gallons.
1902 ...	216½	17,346	86,730	1,499,674	4,108,696	47
1903 ...	229½	17,435	87,175	1,413,722	3,873,211	44
1904 ...	240½	17,814	89,070	1,686,845	4,621,493	52
1905 ...	250½	18,855	94,275	1,749,820	4,794,028	51
1906 ...	264	19,223	96,115	1,630,899	4,468,216	46½
1907 ...	280½	20,050	100,250	1,777,333	4,869,406	48½
1908 ...	296½	20,365	101,825	1,620,057	4,438,514	43½
1909 ...	308½	21,560	107,800	1,673,287	4,584,351	42½
1910 ...	317	22,830	114,150	1,776,734	4,867,766	42½
1911 ...	333½	24,153	120,765	1,870,767	5,125,390	42

The total length of the trunk mains is 52½ miles.

Particulars relating to the sewerage system of Brisbane are not available.

6. **Country Towns Water Supply, 1910.**—In addition to the city of Brisbane there were at the end of the year 1910 twenty-three towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The sub-joined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1910:—

**QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1910.**

Cost of construction to 31/12/10 ...		£ 681,102	Expenditure	Office and salaries ...		£ 8,732
Receipts	Rates and sales of water	71,592		Construction ...		17,057
	Other	5,272*		Maintenance ...		18,884
	Total Receipts	76,864		Interest & redemption		29,650
Assets		557,264	Total		74,323	
			Liabilities		406,553	

\* Including £3282 from Government loans.

7. **Fire Brigades.**—In the year 1910 there were twenty-six fire brigades organised in various towns in Queensland. The revenue of these brigades is derived chiefly from grants from the Government, from municipalities, and from the insurance companies, generally in equal proportions, and the following table gives these particulars for the year 1910:—

**QUEENSLAND.—FIRE BRIGADES, 1910.**

Receipts.		Amount.	Expenditure.		Amount.
		£			£
From Government	...	4,609	Salaries and wages	...	7,822
„ Local authorities	...	4,677	Building, repairs, etc.	...	450
„ Insurance companies	...	4,616	Plant, stores, clothing, etc.	...	2,607
„ Other sources	...	1,884	Other	...	3,187
Total	...	15,786	Total	...	14,066

At the end of the year 1910 the fire brigades staffs comprised 64 permanent men, 295 partly paid, and 76 volunteers. The metropolitan brigade at Brisbane and the South Brisbane brigade protect an area of 9½ square miles; their joint staffs comprise 55 men. They have three steam engines and one motor turbine, nine hose reels, and 16,432 feet of hose. There are 48 telephone fire alarms and 40 call points.

### § 5. South Australia.

1. **Development of Local Government Systems.**—In the latter part of 1839 the first municipal law was passed in South Australia, which was thus the birthplace of municipal government in the Commonwealth. On the 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council, consisting of nineteen members, and the system has since been extended throughout the settled parts of the State by the formation of district councils and municipal corporations, which are the two types of local authorities now in existence.

2. **District Councils.**—The first District Councils Act was passed in 1858, was amended in 1862, and was further amended and consolidated by the District Councils Act of 1876, which provided for the continuation of existing districts and for the establishment of new ones by proclamation on the petition of the ratepayers. The revenue of the councils consisted of rents, profits, and income from lands vested in the council or over which the council had the control and management; fines and penalties enforced under the Act; fees for licenses; and general and special rates and loans. Provision was made for the election of councillors, their number, qualification, and retirement; for the election of auditors; the meetings, powers and functions of councils; the appointment of constables; revenue and expenditure; assessment and rates; and for making by-laws for various purposes. The Act of 1876 was amended from time to time, and was finally amended and consolidated by the Act which is now in force, namely, the District Councils Act 1887, which has in turn been amended in the years 1899, 1890, 1897, 1904, and 1905. These Acts were again amended by the Local Government Act 1910.

(i.) *The District Councils Act 1887* provides for the continuation and amalgamation of existing districts and for the constitution as a new district of any part of the State containing rateable property capable of yielding upon a rate not exceeding one shilling in the pound the sum of £200. The Governor is authorised to alter the area or boundaries of any district by annexation or by subdivision. New districts are constituted upon petition to the Governor; every petition must be signed by fifty inhabitants of the part sought to be constituted, and if the proposed district comprises portion of a previously existing district, by a majority of the ratepayers of such portion.

(a) *Qualification of Councillors.* Every male ratepayer, if of full age, is qualified to be a councillor, unless he is a minister of religion, a stipendiary magistrate, an uncertificated insolvent, or is the treasurer or a paid official of the district council, or is interested in any contract, except for advertisements and printing, with the district council. The chairman is elected by the councillors from their own number.

(b) *Qualification of Electors.* Every person of either sex, if of the age of twenty-one years, whose name appears as a ratepayer in the assessment book is entitled to vote at the elections of councillors and auditors. In case of a joint tenancy or a tenancy in common, only one person is entitled to a vote for every £75 or part thereof at which the property is assessed.

(ii.) *Assessment and Rates.* Assessments are generally made at four-fifths of the gross annual rent at which the property would let for a term of seven years, or at 5 per cent. on the capital value, but in case of land within a township, not less than twenty acres in area, and not built on, used, or divided by roads, assessment is made at the rate of 2½ per cent. on the value of the fee-simple. All other township land unbuilt on is assessed at 5 per cent. on the fee-simple value, and for lands held under mining lease from the crown, the assessment may not exceed the annual rental. (a) *General Rates* may not be more than one shilling and sixpence nor less than threepence in the pound on the assessed value. (b) *Special Rates* for permanent works may also be declared, provided that the general and special rates together do not exceed two shillings and sixpence in the pound. No special rate may be declared without the consent of the ratepayers to be obtained at a meeting called for the purpose, and any six ratepayers may demand a poll to be taken on the subject. The ratepayers of any portion of a district may memorialise the council for specific works for the benefit of such portion of the district, and if the council decide to comply with the memorial a *separate rate* may be levied in respect of property in the portion defined. Lighting rates may also be declared, but must not exceed fourpence in the pound.

(iii.) *Loans.* Any council may, for the execution of any works for which a special or separate rate has been declared, borrow on the security of such rate up to ten times the amount which at the time of borrowing would result from a rate of one shilling in the pound, but if demand be made by any twenty ratepayers, the question whether or not the proposed loan be incurred must be submitted to a poll of the ratepayers. The interest payable on any such loan must not exceed 6 per cent. By an amending Act passed in the year 1904, additional borrowing powers were conferred on the councils for the purpose of carrying out permanent works subject to the conditions that the total amount borrowed must not at any time exceed three times the amount which would result from a rate of one shilling in the pound, and that the principal sum and interest must be repaid by means of a sinking fund within forty-two years.

(iv.) *Revenue and Expenditure.* The revenue of the councils consists of rents, profits and income from property vested in the council or over which the council has control; the proceeds from the sale of such property; fines and penalties imposed under the Act; fees for licenses; rates; and main road subsidies. Under the District Councils and Corporation Subsidy Act 1890 provision is made for grants out of the general revenue to district councils and corporations in lieu of fees received under the Auctioneers Act 1862 and the Licensed Victuallers Act 1880. The amount of such grant is a sum equal to five shillings in the pound on the amount collected from general rates not exceeding one shilling in the pound declared during any one year. Revenue may be expended in carrying out any authorised works; in payment of salaries and professional fees; in subscriptions to charities; in payment of councillors' travelling expenses; in promoting bills before Parliament, and generally in carrying out the purposes of the Act.

(v.) *Powers and Duties of Councils.* A council may carry out certain permanent works which are defined in the Act, and which comprise the following :—The construction of new streets and roads, sewers and drains; the construction or purchase of water-works, district offices, pounds, abattoirs, markets, baths, hospitals and other charitable institutions; the providing of libraries, museums, and places of public recreation; and the construction of tramways and machinery for the treatment of refuse. The councils are invested with wide powers to make by-laws for the more effective exercise and discharge of their powers, duties, and liabilities, particularly in respect of the following matters :—The compulsory purchase of land; manufacturing districts; the public health; the sale of food and drugs; the management of unoccupied waste lands of the Crown; drainage; piers, jetties, and wharves; weights and measures; vermin destruction; game and fisheries; streets, roads, and public places; fire brigades; impounding; and for fixing penalties for breaches of such by-laws. Upon the district councils is also imposed the duty of administering the Health Acts, the Sale of Food and Drugs Acts, the Game and Fisheries Acts, the Vermin Acts, the Bush Fires Act, the Impounding Act, the Weights and Measures Act, and the Slaughter House Act.

3. *Municipalities* were first established under the Municipal Corporations Act of 1861, which, after providing for the extension of the powers and duties of the Corporation of the City of Adelaide, authorised the Governor, on petition of a majority of not less than two-thirds of the property-owners, to constitute any town, district, or place within the province, into a municipality. This Act and its amendments were consolidated in the Municipal Corporations Act of 1880, which was amended from time to time until the year 1890, when it was repealed and its provisions consolidated by the existing Act, the Municipal Corporations Act of 1890, which was in turn amended in 1893, 1896, and 1903. These Acts were again amended by the Local Government Act 1910.

(i.) *The Municipal Corporations Act 1890.* After making provision for continuing existing corporations and by-laws the Act authorises the Governor to constitute new municipalities, or to alter the boundaries of existing ones, on petition of not less than two-fifths of the ratepayers or owners of ratable property within the land proposed to be incorporated, separated, or added; and also to rearrange, increase or diminish the number of wards of a municipality on petition of not less than one-fifth of the ratepayers therein. Each council consists of a mayor, and of two councillors for each ward, and the provisions as to their qualifications are substantially the same as in the case of district councils referred to above. All persons of full age, if British subjects and not in receipt of public relief or alms, who are either owners or occupiers of any ratable property within a municipality are entitled to vote at the election of the mayor and councillors. Provision is made for the nomination and election of the mayor, councillors, and auditors, and for regulating the meetings of the councils.

(ii.) *Functions of Municipal Councils.* All public streets and roads are vested in the council of the municipality in which they lie, but no street can be declared a public street after the passing of the Act unless it is at least forty feet wide. Full powers are given as to opening, closing, or fencing public streets, and for supervising the formation and repair of private streets and lanes. Councils are further authorised to execute works for, or to contract for the lighting, sewerage, and drainage of municipalities; to take all measures requisite for the public health; to establish public baths, fountains, and parks; to grant licenses for slaughter-houses, hide and skin markets, for the depasturing of cattle, and for the removal of sand and gravel; to control the erection or pulling down and the maintenance of buildings and hoardings; to organise fire brigades, and to order the removal of inflammable buildings. Under the Health Act 1898, every district and municipal council is constituted the Local Board of Health for its particular district, and is charged with the execution of the provisions of that Act for securing the proper hygienic and sanitary conditions in such district.

(iii.) *Assessments and Rates.* Owners and occupiers of ratable property in municipalities are assessed each year on the same basis as stated above in respect to ratable property within districts under the government of district councils. In addition to the rate authorised by the Public Health Act a *general rate*, not exceeding one shilling in the pound, may be declared; rates for lighting and for the improvement of parks and reserves may also be levied, the former being limited to fourpence and the latter to threepence in the pound. The council may also declare a rate for defraying the expense of watering streets, to be apportioned among the persons liable for the rates in respect of properties fronting such streets. *Special and separate rates* may also be levied in the same manner as by district councils, but, in the case of municipalities, the general and special rates together must not exceed two shillings in the pound.

(iv.) *Borrowing powers* of municipal corporations are substantially the same as those of district councils, and similar additional powers were given to municipalities as to districts by the Municipal Corporations Amendment Act 1903.

(v.) *Revenue, Expenditure, and Miscellaneous.* Other provisions as to the revenue and expenditure of municipalities, and their powers as regards permanent works, are the same as those in force under the Districts Councils Acts, referred to above, while very wide powers are given to municipal councils in respect of a variety of matters and things to provide by means of by-laws for the general good government of the municipalities.

4. **Finances of District Councils and Corporations, 1902 to 1910.**—The subjoined tables shew the amounts of assessments and the revenue and expenditure of district councils and of corporations for each financial year from 1902 to 1910 inclusive; the figures given are exclusive of the Main Roads Funds, particulars as to which may be found in the section of this book on "Roads and Bridges."

**SOUTH AUSTRALIA.—ASSESSMENT, REVENUE, AND EXPENDITURE OF LOCAL AUTHORITIES, 1902 to 1910 (EXCLUSIVE OF MAIN ROADS FUNDS).**

Year.*	Amount of Assessment (Annual Value).	Revenue.				Expenditure.	
		From Rates.	From Subsidies.	Other Sources.	Total.	On Public Works.	Total.
DISTRICT COUNCILS.							
	£	£	£	£	£	£	£
1902	1,433,036	63,193	15,735	38,198	117,126	66,355	121,210
1903	1,452,413	64,207	15,358	40,713	120,278	64,642	122,936
1904	1,488,716	70,975	14,252	39,766	124,993	70,201	123,779
1905	1,503,230	71,603	15,490	46,603	133,696	69,769	131,028
1906	1,604,979	75,253	16,845	39,987	132,085	72,067	128,605
1907	1,647,895	81,295	18,296	28,395	127,986	81,208	121,030
1908	1,801,370	84,036	23,054	27,079	134,169	89,665	128,072
1909	1,849,286	89,051	20,718	30,783	140,552	104,834	146,468
1910	2,098,282	96,550	25,483	30,058	152,091	101,979	146,593
CORPORATIONS.							
1902	1,195,991	87,961	9,113	60,531	157,605	58,651	157,523
1903	1,208,825	85,702	10,470	57,509	153,681	55,544	152,475
1904†	1,222,522	96,545	14,766	45,534	156,845	61,004	156,722
1905	1,236,578	98,632	15,127	47,267	161,026	60,720	159,863
1906	1,253,566	99,160	14,713	52,225	166,098	63,422	162,078
1907	1,254,956	100,863	14,276	39,779	154,918	88,525	161,754
1908	1,286,696	103,109	15,479	50,470	169,058	86,889	167,797
1909	1,340,755	108,480	15,828	57,837	182,145	97,118	177,897
1910	1,385,752	112,896	16,589	57,494	186,979	104,586	198,875

\* Up to and including the year 1903, the financial year for Corporations ended on the 31st December, but after that date ends on the 30th November. The financial year for district councils ends on the 30th June. † For eleven months ended the 30th November, 1904.

**5. Adelaide Water Supply System.**—The water supply system of Adelaide is under the control of the Public Works Department. The supply is obtained partly from the catchment areas of the rivers Onkaparinga, Torrens, and Sixth Creek, and partly from springs and pumping stations. There are three storage reservoirs, situated at Happy Valley, Hope Valley, and Thorndon Park, having an aggregate capacity of 3,895,000,000 gallons, while the tanks used in connection with the springs and pumping stations have a further capacity of 4,824,000 gallons. The total capital cost up to the 30th June, 1910, was £1,802,703, the total revenue being £2,422,978 and the area served approximately 80,000 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1905 to 1910 inclusive:—

**ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1905 to 1910.**

Year Ended 30th June.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Net Revenue on Capital Cost.	Total Consumption of Water. <sup>1</sup>
	Miles.	£	£	£	%	Million of Gals.
1905 ...	647	72,471	20,002	52,469	3.16	3,650
1906 ...	656½	72,976	22,298	50,678	3.02	3,550
1907 ...	667½	74,727	19,703	55,024	3.24	3,350
1908 ...	673	76,707	21,233	55,474	3.26	4,000
1909 ...	684	81,412	20,762	60,650	3.53	4,000
1910 ...	704	82,290	22,709	59,581	3.31	4,000

1. In the Adelaide Water District there are no governing meters. The quantities shown above are as recorded by gaugings taken at the reservoirs, and include evaporation and absorption.

**6. Adelaide Sewerage System.**—In connection with the sewerage system of Adelaide, which is also under the control of the Public Works Department, about 288 miles of sewers had been laid in the city and suburbs up to the 30th June, 1910. The sewage is disposed of on a farm and filter-beds, the latter being used only during the winter months.

The following table gives particulars relating to the Adelaide sewerage system for the years 1904 to 1910 inclusive:—

**ADELAIDE SEWERAGE SYSTEM.—REVENUE AND EXPENDITURE, 1904 to 1910.**

Year Ended the 30th June.	Revenue.			Expenditure.			Net Revenue.	
	Rates and Interest.	Sewage Farm. Sales of Produce, etc.	Total.	Maintenance.	Sewage Farm Working Expenses.	Total.	Total.	Percentage on Capital Cost.
	£	£	£	£	£	£	£	%
1904 ...	30,923	6,594	37,517	5,466	5,962	11,428	26,089	4.12
1905 ...	31,682	6,817	38,499	5,679	5,393	11,072	27,427	4.41
1906 ...	32,530	7,006	39,536	5,921	5,901	11,822	27,714	4.45
1907 ...	32,380	6,390	38,770	6,284	5,460	11,744	27,026	4.00
1908 ...	32,678	7,436	40,114	6,294	5,081	11,375	28,739	4.49
1909 ...	34,701	8,284	42,985	7,161	5,917	13,078	29,907	4.56
1910 ...	36,322	7,213	43,535	7,184	6,088	13,272	30,263	4.41

**7. Water Supply in Country Towns.**—In South Australia there is a number of country waterworks under the control of the Public Works Department. These works are partly used for irrigation purposes, and the most important of them have already been referred to in the section of this book dealing with the subject of "Irrigation." (See p. 593 *ante*.) In addition to the works mentioned in the section referred to, there

are other country districts served by reticulations extending over 311 square miles. Detailed particulars of the various works are not available. The total extent of country for which reservoir water is available is about 4250 square miles, the reservoirs holding, in the aggregate, 7,370,000,000 gallons, and the main pipe-lines reaching 2278 miles. The capital cost of the works under the waterworks branch, as distinct from the water conservation branch, which deals with isolated and remote districts, is approximately £4,095,000.

8. **Fire Brigades Board.**—The Fire Brigades of South Australia are managed by a Board consisting of six members, two being nominated by the Government, one by the Adelaide city council, one by the other metropolitan municipalities, and the other two by the contributing insurance companies. The revenue of the Board is derived by contributions of three-ninths by the Government, four-ninths by the insurance companies, and two-ninths by the city of Adelaide and the other municipalities subject to the Act: Brigades are established in the following municipalities, viz., Adelaide, Kensington and Norwood, including St. Peter's, Unley, Port Adelaide, Glenelg, Gawler, Kapunda, Moonta, Kadina, Port Pirie and Port Augusta. The strength of the brigades consists of 87 permanent firemen and 18 auxiliary firemen. The number of calls received during the year 1911 was 352, of which 30 were to fires of a serious nature.

## § 6. Western Australia.

1. **Types of Local Authorities.**—In this State there are three forms of local authorities, namely :—(i.) Municipalities, (ii.) Road Districts, and (iii.) Local Boards of Health. The first Municipalities Act was passed in 1871, but only a few districts were incorporated under it. In 1895 a more comprehensive measure, the Municipal Institutions Act, was passed, and after being amended from time to time was consolidated by the Municipal Institutions Acts 1902 and 1904. In 1906 the most recent enactment, the Municipal Corporations Act, was passed, repealing and consolidating previous enactments. The whole area of the State outside incorporated municipalities is divided into road districts, which are administered under the Roads Act 1902 and 1904. In municipalities the councils act as Health Boards for the purpose of administering the Public Health Act, while outside municipalities local Boards of Health may be formed. In 1904 another local government measure, the Water Boards Act, was passed, under which Boards may be appointed for the control of waterworks, and rates may be levied for the purpose, the maximum being fixed at two shillings in the pound of ratable value.

2. **Municipalities** are now regulated by the Municipal Corporations Act, which came into force on the 1st January, 1907. Provision is made for the continuation of existing municipalities, and the Governor is authorised to constitute new municipalities on petition signed by at least fifty property-holders of the district proposed to be incorporated; to unite adjoining municipalities on petition under their common seals; to sever any portion from a municipality on petition signed by a majority of the ratepayers, and to annex such portion to a contiguous municipality or road district.

(i.) *Municipal Councils* consist of a mayor and councillors, the number of which depends upon the population of the municipality; if the population is less than 1000 there are six councillors, if from 1000 to 5000 there are nine councillors, and if the population is over 5000 there are twelve councillors, or three for each ward. Any male ratepayer of the age of twenty-one years, if a natural born or naturalised subject, is eligible for election as mayor or councillor, except ministers of religion, uncertificated bankrupts, prisoners, and certain other persons who may be disqualified on the ground of interest.

(ii.) *Qualification of Voters.* Every ratepayer, of twenty-one years of age or over, is entitled to vote at the municipal elections. In the case of joint owners or occupiers, each owner or occupier, if not exceeding two in number, is deemed to be the owner or occupier of half the property; if more than two in number the owners or occupiers may appoint two of their number to be registered in respect of the property. Corporations and companies may also nominate two persons to be registered as voters.

(iii.) *Powers and Duties of Councils.* The councils have power to make by-laws with respect to the usual matters pertaining to municipalities, and are also invested with the control and management of all public places, streets, roads, bridges, sewers, and drains within the municipality. They may contract for the lighting of any part of the municipality for a period not exceeding three years, and may levy a lighting rate; they may construct dams or reservoirs for water supply, may establish fire brigades and baths, and may provide places of recreation, pounds, abattoirs, markets, and weighbridges.

(iv.) *Valuation of Ratable Property.* All land is ratable property except the following:—Property of the Crown used for public purposes or unoccupied; property used for religious or charitable purposes; public libraries, museums, etc.; cemeteries; any land declared by the Governor to be exempt from municipal rates. Generally the annual value of improved or occupied land is the average rent obtainable, less 20 per cent., but in no case may the annual value be less than 4 per cent. of the fee-simple value. The annual value of unimproved or unoccupied land is taken to be not less than  $7\frac{1}{2}$  per cent. on the capital value. No allotment of ratable land may be valued at an annual value of less than £2 10s.

(v.) *Rates.* General rates are levied annually, but may not exceed one shilling and sixpence in the pound on the annual value. Lighting rates and special rates for the repayment of debentures and interest may also be struck, but may not exceed the maximum rate allowed in the case of general rates.

(vi.) *Borrowing Powers.* The council of a municipality may borrow money on the credit of the municipality for permanent works, or for the purpose of liquidating the principal moneys owing on account of any previous loan. Permanent works may be the construction or alteration of any street, footway, road, bridge, culvert, wharf, or jetty; the construction of sewers and drains, and works connected with sewerage and drainage; the construction or purchase of waterworks, tramways, municipal offices, pounds, abattoirs, markets, and baths; the improvement of endowment lands; providing places of public recreation; the construction of a general warehouse, or a theatre, or of refuse destructors; and the purchase of quarries or land. The amount borrowed at any time may not exceed ten times the average ordinary income of the municipality for the two years last preceding, and the amount borrowed to liquidate any loan must not exceed the balance of principal owing. A municipality may also overdraw on the amount of its current account, but the overdraft must not at any time exceed one-third of the ordinary revenue for the preceding year.

(vii.) *Government Subsidies.* Grants are made annually to municipalities by way of subsidies on the amounts of rates collected. To entitle any council to participate in the allocation of the annual Parliamentary vote the council must have levied a minimum general rate of one shilling in the pound, and must have collected not less than £300 from such rate. Newly-constituted municipalities are, during the first year of existence, dealt with apart from the provisions of the general scheme, and are allowed a subsidy of £2 for every £1 of general rate collected; in subsequent years they participate according to the general provisions. The following table shews the basis on which the municipalities are classified:—



## WESTERN AUSTRALIA.—CLASSIFICATION OF MUNICIPALITIES.

Income from General Rates.	From £20,000 to £30,000.	From £10,000 to £20,000.	From £5000 to £10,000.	From £500 to £5000.	Under £500.
Class ... ..	1st	2nd	3rd	4th	5th

No subsidy is paid on income from general rates exceeding £3000.

3. **Area, Population, etc., of Municipalities.**—Returns regarding the area, population, and valuation of municipalities are defective. They are shewn in the table hereunder:—

## WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS, AND VALUATION OF MUNICIPALITIES, 1902 to 1910.

Year ended the 31st October.	Number of Municipalities.	Area	Population.	Dwellings.			Amount Payable in respect of Rates.
				Occupied.	Unoccupied.	Total.	
	No.	Acres.	No.	No.	No.	No.	£
1902 ... ..	44	68,867	<sup>1</sup> 96,807 <sup>2</sup>	<sup>2</sup> 20,989	<sup>2</sup> 967	<sup>2</sup> 21,956	<sup>5</sup>
1903 ... ..	44	73,338	<sup>3</sup> 115,350	<sup>2</sup> 20,989	<sup>2</sup> 967	<sup>2</sup> 21,956	<sup>5</sup>
1904 ... ..	43	77,331	<sup>2</sup> 115,182	20,961	960	21,921	<sup>5</sup>
1905 ... ..	43	75,415	<sup>2</sup> 115,182	20,961	960	21,921	132,453
1906 ... ..	45	81,519	<sup>6</sup> 125,474	20,961	960	21,921	142,229
1907 ... ..	47	89,748	136,845	<sup>4</sup> 26,756	<sup>4</sup> 2,050	<sup>4</sup> 28,806	142,770
1908 ... ..	47	90,078	135,525	29,208	2,112	31,320	144,344
1909 ... ..	46	88,833	141,543	30,535	1,263	31,798	138,869
1910 ... ..	42	75,716	<sup>7</sup> 143,808	<sup>7</sup> 31,064	<sup>7</sup> 1,652	<sup>7</sup> 32,716	139,835

1. Census figures, 1901. 2. Returns for thirty-nine municipalities only. 3. Rough census figures, 1903. 4. Exclusive of one municipality. 5. Not available. 6. Returns for forty-four municipalities. 7. Census figures, 1911.

Complete particulars of improved or unimproved capital values are not available. In the year 1910 the capital value of ratable property in municipalities was £20,502,266.

4. **Revenue and Expenditure of Municipalities, 1902 to 1910.**—The following table gives particulars as to the revenue and expenditure of municipalities during each year from 1902 to 1910 inclusive:—

## WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1902 to 1910.

Year ended the 31st October	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other Sources.	Total.	Works and Improvements.	Disbursements in respect of Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1902 ...	94,894	81,436	113,591	289,921	125,721	33,936	123,615	283,272
1903 ...	104,760	80,938	116,653	302,351	142,347	33,294	137,228	312,869
1904 ...	119,110	90,868	213,785	423,763	187,747	38,227	168,524	394,498
1905 ...	130,575	85,798	167,793	384,166	183,226	53,746	174,716	411,688
1906 ...	146,206	95,997	210,226	452,429	165,421	50,739	200,844	417,004
1907 ...	136,868	85,473	151,865	374,206	132,103	57,804	228,475	418,382
1908 ...	139,228	67,315	176,040	382,583	103,943	59,649	239,270	402,862
1909 ...	138,445	37,301	207,982	383,728	83,283	62,749	224,033	370,065
1910 ...	138,719	13,337	230,407	382,463	193,157	68,822	137,837	399,816

5. **Assets and Liabilities of Municipalities, 1902 to 1910.**—The following table gives particulars respecting the assets and liabilities of municipalities at the end of each financial year from 1902 to 1910 inclusive :—

**WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES,  
1902 to 1910.**

Year ended the 31st October	Assets.					Liabilities.		
	Balance in Hand.*	Value of Property owned by Municipalities.	Accrued Sinking Funds for Redemption of Loans.	Other Assets.	Total.	Outstanding Debts and Bonds.	Other Liabilities.	Total.
	£	£	£	£	£	£	£	£
1902† ...	49,557	294,800	62,239	20,420	427,016	413,050	29,700	442,750
1903 ...	41,375	332,492	64,936	34,140	472,943	437,300	41,200	478,500
1904 ...	72,894	354,798	81,514	36,718	545,924	589,800	32,304	622,104
1905 ...	43,209	473,320	94,892	36,086	647,507	623,414	28,031	651,445
1906 ...	78,579	537,407	110,165	46,495	772,646	713,350	45,597	758,947
1907 ...	39,414	553,873	125,742	55,430	774,459	730,994	47,131	778,125
1908 ...	27,291	605,165	143,434	58,988	834,878	757,494	42,321	799,815
1909 ...	41,216	628,205	152,416	56,705	876,542	795,108	36,352	831,460
1910 ...	21,116	669,499	174,119	62,035	926,769	844,844	53,304	898,148

\* Including bank balance, cash in hand, and fixed deposit.

† Exclusive of the municipality of Mount Morgans.

6. **Road Districts.**—The whole area of the State, outside incorporated municipalities, is divided into districts, the executive powers being vested in elective boards. These districts were originally formed solely for the purpose of controlling roads and bridges, but their powers and duties have been extended, so that at the present time they correspond closely to the shires of the other States of the Commonwealth. The enactments at present governing the administration of the Road Boards are the Roads Act 1911, the Parks and Reserves Act, the Cattle Trespassing Act, the Width of Tyres Act, the Cart and Carriage Licenses Act, and the Dog Act. The general powers and duties of the Boards as regards roads and bridges are described in the chapter of this book entitled "Roads and Bridges." (See page 686 *ante*.) In addition to these powers and duties the Boards have power to do everything necessary for the proper management of the property under their control, and may also construct and maintain tanks, wells, and dams, and bore for water for the purpose of supplying water along any road in the district. Subject to the provisions of the Roads Acts, the Board has also the control and management of any such public reserves, parks, commons, wells, dams, reservoirs, buildings, machines, etc., as the Governor may direct. The Board has also extensive powers for making, altering, and repealing by-laws.

7. **Boards of Health** may be established under the Public Health Act 1886, either within or outside of municipal boundaries. In the former case the Act is administered by the municipal councils, while in the latter case special Boards are elected by the ratepayers. The revenue of these Boards consists chiefly of moneys received from health rates and sanitary fees, and the largest item of expenditure is directly connected with the sanitary service. The following table shews particulars of the receipts and expenditure of the various Boards—both municipal and extra-municipal—during each year from 1902 to 1910 inclusive :—

**WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH  
BOARDS, 1902 to 1910.**

Year ended the 31st October.	Revenue.			Expenditure.		
	From Public Health Rate.	From other Sources.	Total.	On Sanitary Services.	Other Expenses.	Total.
	£	£	£	£	£	£
1902 ...	17,616	22,569	40,185	19,248	20,114	39,362
1903 ...	21,884	22,610	44,494	22,872	21,184	44,056
1904 ...	25,777	25,904	51,681	28,299	23,321	51,620
1905 ...	26,003	30,864	56,867	30,724	28,061	58,785
1906 ...	<sup>1</sup> 28,242	40,943	69,185	40,518	28,038	68,556
1907 <sup>3</sup> ...	<sup>2</sup> 33,289	35,285	68,574	39,419	31,697	71,116
1908 ...	<sup>5</sup> 36,304	41,674	77,978	<sup>4</sup> 43,830	<sup>4</sup> 34,981	<sup>4</sup> 78,811
1909 ...	<sup>6</sup> 39,447	50,688	90,135	<sup>4</sup> 49,502	<sup>4</sup> 38,465	<sup>4</sup> 87,967
1910 <sup>7</sup> ...	<sup>8</sup> 37,943	<sup>9</sup> 50,558	88,501	55,283	33,350	88,633

1. Including sanitary rates, £11,745. 2. Including sanitary rates, £16,564. 3. Exclusive of particulars of twenty-one boards which did not furnish returns, and of five boards which were not active during the year, all outside municipalities. Particulars for previous years are also incomplete. 4. Exclusive of expenditure of one extra-municipal board. 5. Including sanitary rates, £17,707. 6. Including sanitary rates, £16,804. 7. Exclusive of 10 boards which did not furnish returns, and 14 boards which were non-active during the year. 8. Including sanitary rates, £17,986. 9. Including sanitary fees and charges £13,341.

On the 31st October, 1910, there were forty-two Local Boards of Health within municipalities and seventy-five extra-municipal Boards.

**8. The Perth Metropolitan Water Supply, Sewerage, and Drainage.**—The Perth Metropolitan Water Supply Works were first opened by a private company in October, 1890. Under the provisions of the Metropolitan Waterworks Act 1896, however, the works were purchased by the Government at a cost of £220,000, and were placed under the control of a Board, the functions of which have been exercised since the year 1904 by the Minister for Works. By the Metropolitan Water Supply, Sewerage, and Drainage Act 1909, all water and sewerage works formerly vested in the Metropolitan Board were transferred to a Minister of Water Supply, Sewerage, and Drainage. This Act also provides for the administration of the transferred properties, for the constitution of water reserves, for the construction and maintenance of works, for the prevention of waste, for rates and sale of water, and for other matters.

(i.) *Water Supply.* The supply of water is derived from three sources—(i.) the Victoria reservoir, (ii.) the Mundaring reservoir, and (iii.) from six artesian bores.

(a) *The Victoria Reservoir.* This is the main source of supply. The reservoir has a capacity of 220,000,000 gallons, and has a catchment area of 10,000 acres on the Darling Ranges. The water gravitates from the Victoria reservoir to Perth through two mains which are respectively 21 inches and 12 inches in diameter, and 15½ and 17 miles in length. There are two service reservoirs—one of 2,413,000 gallons, and the other of 600,000 gallons capacity. The quantity of water drawn from this reservoir during the year ended the 30th June, 1910, was 392.7 million gallons.

(b) *The Mundaring Reservoir.* This reservoir is used as an emergency supply. It has a capacity of 4,650,000,000 gallons, but is only connected by one eight-inch main. During the financial year 1909-10, 18,891,000 gallons were drawn. This reservoir has a catchment area of 569 square miles, and was constructed in connection with the gold-fields water supply.

(c) *Artesian Bores.* There are in all six artesian bores, the flow from which augments the main supply from the Victoria reservoir. The total flow is about 360,000,000 gallons during the season, which lasts approximately for six months.

(d) *Financial Operations of Water Supply Department, 1909 to 1911.* The following table gives particulars of the financial operations of the Metropolitan Water Supply Department for each year ending the 30th June from 1909 to 1911 inclusive:—

**PERTH METROPOLITAN WATER SUPPLY DEPARTMENT.—PARTICULARS OF  
FINANCIAL OPERATIONS, 1909 to 1911.**

Year ended the 30th June.	Capital Cost of Works.	Depreciation.	Net Capital Cost.	Gross Revenue.	Cost of Maintenance and Management.	Interest Earned on Gross Capital Cost.	Ratio of Working Expenses to Revenue.
	£	£	£	£	£	Per cent.	Per cent.
1909 ...	524,022	34,468	489,554	45,711	14,162	6.02	30.98
1910* ...	628,757	44,415	584,342	60,249	20,862	6.26	34.62
1911* ...	645,023	92,351†	552,672	61,723	22,081	6.15	35.77

\* Perth, Fremantle, and Claremont combined. † £39,724 transferred from reserve account to depreciation to provide for estimated over valuation made at time of purchase of Perth Water Supply.

(e) *Consumption of Water, 1909 to 1911.* The following table shews the total annual supply, the average daily supply, and the average daily supply per house and per head of population during each financial year from 1909 to 1911 inclusive:—

**PERTH METROPOLITAN WATER SUPPLY DEPARTMENT.—CONSUMPTION OF  
WATER, 1909 to 1911.**

Year ended the 30th June.	Total Annual Supply in ,000 Gallons.			Average Daily Supply in Gals.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply in Gals.		
	From Reservoir.	From Bores.	Total.				Per House.	Per Head of Population.	
PERTH DISTRICT.									
1909	...	349,467	281,585	631,052	1,731	14,012	54,000	123	32.0
1910	...	392,715	281,104	673,819	1,846	14,512	56,000	127	33.0
1911	...	414,512	355,810	770,322	2,110	15,075	59,000	131	35.7
FREMANTLE DISTRICT.									
1909	...	...	282,785	282,785	774,753	3,971	19,000	195	40.75
1910	...	...	278,179	278,179	762,133	4,042	19,500	188	39
1911	...	...	286,461	286,461	782,085	4,150	20,000	188	39.1
CLAREMONT DISTRICT.									
1909	...	...	105,584	105,584	289,271	1,670	7,000	173	41.3
1910	...	...	101,240	101,240	277,370	1,783	7,500	156	37
1911	...	...	110,275	110,275	302,123	2,042	8,000	148	37.7

(ii.) *Sewerage and Drainage in Perth and Fremantle.* The work of providing a sewerage system for Perth and Fremantle was commenced in 1906, and has proceeded without interruption up to the present time. The method of sewage disposal adopted by both schemes is bacterial treatment by means of septic tanks. The main portion of each district is dealt with by gravitation, while the sewage from the low-lying portions along the river frontage is to be lifted to the main pipe line by means of electrically-controlled centrifugal pumps, Perth being served by three stations, and Fremantle by four. There are now over ten miles of various-sized pipes laid, ranging from 3 ft. 3 in. by 2 ft. 2 in. Monier to 6 in. stoneware. The Perth treatment works, situate at Claisebrook, on the west side of the river, consists of four septic tanks, each 100 ft. by 50 ft., with a capacity for a population of about 30,000, the effluent being syphoned across the river to four filter beds, each 100 ft. in diameter, the filtrate then being discharged into the Swan River. The results have so far been satisfactory. The Fremantle works consist of three septic tanks of sufficient capacity to serve a population of about 17,000, the effluent being discharged direct into the open sea at some distance from the main shore. House connections in Perth are making rapid progress, there being upwards of 700 premises already connected to the sewers. In Fremantle the work of connecting has just commenced. The whole of the metropolitan area, and a large portion of the surrounding districts, as well as Fremantle, are served by a system of arterial stormwater drains, of sufficient capacity to cope with the wet conditions of winter months experienced in this State. The total cost of the sewerage scheme is £150,000. The cost of the septic tanks and filters was £34,000.

**9. Fremantle Harbour Trust.**—Under the provisions of an Act passed in 1902 a Harbour Trust was constituted for the general administration of Fremantle harbour, and since January, 1903, the Trust has had full control of all the affairs of the harbour, and undertakes the duties of wharfingers, and the receiving, sorting, storing, delivering, and handling of all cargo, between vessels and the owners of the goods. The works, which were commenced in 1892, were designed with the object of forming a safe and commodious harbour within the mouth of the Swan River, so as to admit vessels at all states of the tide, and thus enable cargo to be loaded and discharged at the quays and goods-sheds on the river banks. Two ocean moles have been thrown out from the north and south heads, the former being 3450 feet and the latter 2040 feet long. A channel, 450 feet wide and 30 feet deep at low water, has been blasted and dredged through the rock which formerly crossed the estuary to the river, and wharves and goods-sheds have been constructed along the reclaimed foreshore on both sides of the harbour. The port possesses up-to-date electrically operated grain storage and shipping appliances, and the quays are well equipped with electric cranes and elevators, all wharves and stores being in direct communication with the State railway system. At the present time all the European mail boats, which make Fremantle the first and last port of call in Australia, are able to enter and leave the harbour in all weather and at all tides. For the year ended the 30th June, 1911, the total revenue of the Trust was £177,433, and the expenditure £54,174, shewing a gross profit of £123,259. The gross amount paid to the Treasury for the year was £96,801, being interest £51,711, sinking fund £14,774, and surplus revenue account £30,315.

**10. Fire Brigades Boards.**—Under the Fire Brigades Act 1898, fire brigades were established in a number of the more important centres of population in the State. These brigades were under the control of local boards, and were in some cases municipal and in others volunteer. On the 30th June, 1910, there were forty-five such Boards in existence. The figures given below shew particulars of forty-two of these Boards for the year 1909-10, three Boards having remained inactive during the year:—

**WESTERN AUSTRALIA.—FIRE BRIGADES BOARDS, 1909-10.**

Number of firemen ... ..	784	Value of land, buildings, & plant	£38,449
Receipts ... ..	£15,632	Expenditure... ..	£15,458

An Act to make further provision for the protection of life and property from fire was passed in 1909 and came into operation on the 1st January, 1910. It is called the District Fire Brigades Act, and divides Western Australia into two fire districts under the control of a Fire Brigades Board. The Board is constituted as follows:—two members nominated by the Government; one member nominated by the Perth City Council; one member elected by the Municipalities of Kalgoorlie, Boulder, Coolgardie, and the Kalgoorlie Road Board; one member elected by the Municipalities and Road Boards other than those above-mentioned; three members elected by the Insurance Companies; and one member elected by the Volunteer Fire Brigades. The election of the Board takes place bi-annually, and its income is provided as follows—two-eighths by the Government, three-eighths by the Municipalities and Road Boards and three-eighths by the Insurance Companies. The receipts for the year 1911 amounted to £30,087, and the expenditure to £31,649, leaving a debit balance of £1562.

The whole of the brigades throughout the State are now controlled by this Board and number fourteen purely permanent; six partly permanent and partly volunteer; and twenty-six purely volunteer brigades; making a total of forty-six. The staff includes a chief officer, deputy-chief officer, five district officers, eighty-eight permanent firemen, seventy-one auxiliary firemen, and 580 volunteer firemen.

## § 7. Tasmania.

1. **Development of Local Areas.**—In this State the city of Hobart was incorporated by special Act in the year 1852, but it was not until 1858, when the Rural Municipalities Act was passed, that a general scheme for the establishment of municipalities was extended throughout the State. This Act was amended from time to time without, however, altering its chief characteristics. In 1869 a Roads Act was passed, and after being amended at various times was consolidated in 1884. Under the provisions of these Acts parts of the State were placed under the control of Town Boards and Road Trusts. The general rate under the Municipalities Act was limited to one shilling and sixpence in the pound of annual value, while special rates could be levied in rural districts, provided that the general and special rates together did not exceed one shilling and sixpence in the pound.

2. **Acts now in Force.**—In 1906 the whole of the Acts dealing with local authorities were amended and consolidated by the Local Government Act of that year. The whole State, with the exception of the urban municipalities of Hobart and Launceston, is divided into municipal districts, and every Rural Municipality, Town Board, Main Road District, Road District, Local Health District, Fruit District, Rabbit District, School District, and Public Recreation Ground District included in any municipality established by the Act is abolished. Each district is incorporated and is under the control of a warden and councillors, who, in addition to the specific duties and powers imposed and conferred by the Act of 1906, are vested with powers and authorities under the following Acts:—The Codlin Moth Act 1888, the Rabbits Destruction Act 1889, the Public Health Act 1903, the Education Act 1885, the Roads Act 1884, the Rural Municipalities Act 1865, the Police Act 1905, the Town Boards Act 1896, the Public Recreation Grounds Act 1888, the Cemeteries Act 1865, and the Californian Thistle Act 1883. The Governor is authorised to unite, subdivide, or abolish municipalities or wards on petition, and may do so without petition if in any municipality there is at any time no council or an insufficient number of councillors to form a quorum. The Act of 1906 was amended in 1908, and again in 1911.

(i.) **Formation of Councils.** In the case of municipalities not divided into wards the council is to consist of the number of members, being a multiple of three, assigned to it by the Governor, while the councils of municipalities which are subdivided consist of

three councillors for each ward. Any resident elector is eligible to act as a councillor unless he is disqualified as being an interested person, a bankrupt or convict, or as undergoing a sentence of imprisonment, or as insane. The warden is elected by the councillors from their own body.

(ii.) *Qualification of Electors.* Both owners and occupiers of property within a municipality are allowed plurality of votes according to the following scale :—

Annual Value of } Property	Under £30.	£30 to £80.	£80 to £160.	£160 to £240.	£240 to £360	£360 and upwards.
Number of Votes	1	2	3	4	5	6

In the case of joint owners or occupiers the number of votes according to the above scale is equally divided as far as possible, and the vote or votes which cannot be so divided may be given by such one of the joint owners or occupiers as may be appointed by the others. The provisions of the Acts relating to voting by post at parliamentary elections may be made applicable to any municipal election on the petition of the council to the Governor.

(iii.) *Local Districts and Committees.* Any municipal council may by special resolution define a local district to be assigned to a local committee, and any district proclaimed under the Public Recreation Grounds Act 1888 may also be defined as a local district. A local committee may exercise any of the powers and functions conferred upon councils as may be declared to be within its province by special resolution.

(iv.) *Revenue and Rates.* The ordinary revenue of a council, which consists principally of (a) rates (other than special rates), tolls, ferry dues, market dues, fees, and other charges authorised by the Act, and (b) grants from the central Government, is carried to a general account called the municipal fund. Rates are of two kinds, namely, (a) general, and (b) special. (a) *General Road Rates*, of not less than sixpence in the pound of the annual value of the whole of the ratable property in a municipality, must be levied at least once a year, but the total amount of all such rates levied in any one year must not exceed one shilling and threepence in the £. The proceeds of general road rates are carried to a separate account and are to be applied for the purposes of constructing and maintaining roads, streets, bridges, jetties, wharves, and tramways; at least three-fifths of all sums received in respect of property situate in a particular ward from the making of such a rate must be expended within such ward for the purposes mentioned. *General Health Rates* may be levied either prospectively or retrospectively in order to defray the expenses incurred in the execution of the Public Health Act 1903. (b) *Special Rates* may be made for the purpose of defraying the cost of constructing and maintaining works for sewerage or drainage, for the manufacture of gas, electricity, hydraulic or other power; watering or lighting roads; maintaining public recreation grounds; the destruction of rabbits; any of the purposes of the Public Health Acts; and of constructing and maintaining slaughter houses, abattoirs, or other works. A *Codlin Moth Tax* may be levied as prescribed by the Codlin Moth Act 1888, and when a council undertakes the removal of house refuse from premises the expense of such work is to be paid for by a *Special Cleansing Rate*. For defraying the expenses incurred in the execution of any work for the special benefit of a particular part of a municipality, the council may also levy a special rate called a *Separate Local Rate* upon all ratable property within such part, but the question as to whether any work is or is not for the special benefit of any particular part of the municipality must be referred to the Minister, who may direct, when such rate would exceed sixpence in the pound, that the question of levying the same be left to the decision of the electors of the defined part; whenever the expense to be incurred involves more than one yearly rate, the question must be referred to the electors.

(v.) *Ratable Property.* The council is not empowered to levy any rate or charge (except for water, prevention of fire, cleansing, drainage, or sewerage, or for light or power actually supplied, or for any service actually rendered) upon—Crown property; any property used solely for religious purposes; any portion of any premises used exclusively as a public library, museum, school of arts or mines, literary or scientific institution, or any cemetery; benevolent asylums or charitable institutions; or upon any building or place vested in trustees for an agricultural or pastoral society for the purposes of a show ground. The Crown has in any such case the right to commute its liability by payment of a sum agreed upon between the council and the Treasurer.

(vi.) *Borrowing Powers.* Power is given to the council to borrow money either—

- (a) By the sale of debentures under provisions of the Local Bodies Loan Act for the purpose of permanent works and undertakings, or for the purpose of liquidating the principal sum owing on account of a previous loan; or
- (b) By way of temporary advances against rates to an amount not exceeding one-half the expected total proceeds of such rate. Temporary advances must be paid within twelve months of the date of borrowing.
- (c) Under the amending Act of 1908, councils may raise temporary loans by way of bank overdraft on the credit of the municipality to an amount not exceeding one-half of the prior year's revenue, and in addition may overdraw to the extent of deposit receipts for money due by the bank.

(vii.) *General By-laws.* The councils have wide powers to make by-laws for the general purposes of the Act, and particularly in connection with the following matters:—The trespass and agistment of animals; the erection or demolition of buildings, awnings, and temporary structures; the prevention and extinction of fires; the granting of licenses; the regulation of markets and weighbridges and the establishment of rents and fees for the use thereof; the regulation or the prohibition of the introduction of any pest or anything affected by a pest; the control of public safety and the preservation of public decency; the control and management of roads and footways; the imposition and collection of tolls upon roads and bridges, and of rates and dues upon ferries, wharves, tramways, jetties, piers, and markets under the control of the council; the regulation of various trades and callings; the control of the general traffic in public places, boats and boatmen, vehicles, steam rollers, and bicycles.

The councils are also vested with all powers which were conferred upon any of the local bodies mentioned above (see page 1032 *ante*, par. 2), and which were abolished by the Local Government Act 1906.

(viii.) *Water Districts.* Any number of municipalities, situated so as to be capable of taking advantage collectively of some common water system or catchment area, may by petition to the Governor be constituted a water district under the Act. In every case where a water district is proclaimed upon the joint petition of two or more municipal councils the management of such district is in the hands of a joint council consisting of such a number of members of each of the councils as the Governor may determine. This council is invested with borrowing and rating powers and may supply water within the district on such terms as it may fix, provided that no water may be supplied for irrigation until domestic and stock supply purposes have first been satisfied. Provision is also made in the Act for uniting municipalities for the purpose of carrying out sewerage, irrigation, or water conservation schemes for the common benefit of the municipalities, or for any other purpose authorised by the Act, such as, in the opinion of the Governor, is likely to be of permanent utility, and is best capable of being carried out by concerted action.

**3. Annual Value, Revenue, and Expenditure of Municipalities.**—The following table shews the annual value, total receipts, and expenditure of municipalities for the years 1908, 1909 and 1910.



**TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF MUNICIPALITIES,  
1908, 1909, and 1910.**

Year.	Number of Municipalities.	Annual Value of Ratable Property	Revenue.				Expenditure. <sup>2</sup>
			From Rates.	From Govt.	From other Sources. <sup>1</sup>	Total.	
		£	£	£	£	£	£
1908 ...	51	1,340,243	142,466	40,254	186,466	369,186	353,699
1909 ...	51	1,404,328	173,453	44,293	92,244	309,990	318,501
1910 ...	51	1,459,917	147,750	35,616	87,994	271,360	266,108

1. Including sums derived from loans.      2. Including repayments of loans.

The capital value of ratable property in 1910 was £30,924,993.

**4. Total Revenue and Expenditure of Local Bodies, 1908 to 1911.**—Particulars as to Road Boards and Road Trusts are given in the chapter of this book on "Roads and Bridges." In addition to the local authorities already mentioned, Marine Boards have been established at seven ports in Tasmania for the purposes of constructing and maintaining wharves and jetties and of controlling all matters relating to the shipping in the respective ports. Twenty water trusts and forty cemetery trusts have also been established in connection with municipal bodies. The subjoined statement shews the total revenue and expenditure for all local bodies, exclusive of all amounts contributed by the general Government, during each financial year from 1908 to 1911 inclusive.

**TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE  
OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1908 to 1911.**

Particulars	1907-8.	1908-9.	1909-10.	1910-11.
<b>*REVENUE.</b>				
	£	£	£	£
Marine Boards and Lighthouses ...	66,586	72,810	74,723	72,507
Municipalities ...	170,159	396,186	309,990	271,360
Road and Bridge Trusts ...	34,612	†	†	†
Cemetery Trusts ...	1,269	†	†	894
Town Boards ...	35,506	†	†	†
Water Trusts ...	18,715	2,281§	2,325	2,267
<b>Total ...</b>	<b>326,847</b>	<b>471,277</b>	<b>387,038</b>	<b>347,028</b>
<b>†EXPENDITURE.</b>				
	£	£	£	£
Marine Boards and Lighthouses ...	77,601	69,213	82,627	68,894
Municipalities ...	171,202	353,699	318,501	266,108
Road and Bridge Trusts ...	34,153	†	†	†
Cemetery Trusts ...	1,359	†	†	769
Town Boards ...	35,328	†	†	†
Water Trusts ...	24,171	2,334§	1,923	4,138
<b>Total ...</b>	<b>343,814</b>	<b>425,246</b>	<b>403,051</b>	<b>339,909</b>

\* Exclusive of amounts contributed by the general Government: † Exclusive of expenditure from Government contributions. ‡ Included in municipalities under the new Local Government Act. § Receipts and expenditure of eight water trusts not included in municipalities. || Exclusive of a number of cemetery trusts incorporated in the newly organised municipalities.

**5. Hobart Water Supply.**—The original water supply of Hobart was obtained from a stream known as the Hobart Rivulet, flowing from Mount Wellington, the works being carried out in 1831 by the Imperial Government. These works consisted of an aqueduct and a line of cast-iron pipes, the water being distributed to several points known as "wells." By an Act of the State Parliament passed in 1860 the works were transferred to the municipality. Under this Act certain additional streams flowing from Mount Wellington were acquired as sources of supply, and a storage reservoir containing 45,000,000 gallons was constructed. The catchment area on Mount Wellington at present comprises an area of 4200 acres, the sources of supply having been extended at various times as far as the North West Bay River, fifteen miles from Hobart.

(i.) *Storage Reservoirs.* There are two storage reservoirs about  $2\frac{1}{2}$  miles from the city. One contains 68,000,000 gallons and is 502 feet above sea-level, while the other contains 45,000,000 gallons and is 447 feet above sea-level. The whole of the supply is by gravitation. The water is brought from the various streams by means of stone aqueducts and cast-iron pipes to the reservoirs, and thence by four 10-inch cast-iron mains, of which three lead to the distributing reservoirs and one direct to the shipping and southern portion of the city.

(ii.) *Capital Cost, Tenements Connected, Length of Mains, Revenue and Expenditure, 1911.* The total capital cost to the end of 1911 was £218,122, but a considerable amount of reticulation work has been done out of revenue and not charged to capita account. The outstanding loans at the end of 1911 amounted to £172,175. At the same date the number of tenements supplied in the city and suburbs was 7931, the population 38,884, and the length of reticulation mains 83 miles. The revenue and expenditure for the last six years were as follows:—

#### HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1906 to 1911.

Particulars.	1906.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
Revenue ... ..	19,125	21,802	19,719	20,091	20,643	31,207
Expenditure ... ..	15,817	17,785	22,901	23,729	22,238	20,381

(iii.) *Proposed Extensions.* Parliamentary sanction to borrow £93,000 has been obtained for the purpose of improving the water supply of the city and suburbs of Hobart; £75,000 of this amount is to be spent on a new storage reservoir, and a contract for the construction of the dam for £56,500 has recently been let, the balance being retained for expenditure on other works connected with the scheme.

**6. Hobart Sewerage System.**—A scheme for the construction of a sewerage system in Hobart was adopted in 1903. The sewage is discharged into the estuary of the River Derwent. Up to the end of the year 1911 about 68 miles of sewers had been laid, and 6089 tenements (out of a total of 6580) had been connected at a cost of about £174,760. The revenue for the year was £9180. The scheme, which is intended to sewer over 2000 acres so as to serve an estimated population of about 30,000 people, is almost completed.

## § 8. Local Government Finance.

**1. Introduction.**—In the preceding parts of this section certain particulars have been given regarding local authorities in each individual State. It is proposed to here give in a comparable form for each State particulars regarding the financial operations of local governing bodies. The areas controlled by these bodies are variously known in the

several States as cities, towns, boroughs, shires, municipalities, municipal districts, and road districts. The particulars given in the tables in the two next paragraphs relate to financial years ending as follow:—New South Wales: for the calendar year 1910. Victoria: 30th September, 1910, except Melbourne, 31st December, and Geelong, 31st August, 1910. Queensland: Calendar year, 1910. South Australia: Corporations, 30th November, and district councils, 30th June, 1910. Western Australia: 31st October, 1910, except road districts, 30th June, 1910. Tasmania: Calendar year, 1910.

2. **Number, Revenue, Expenditure and Valuation of Local Authorities, 1910.**—The following table gives particulars of the number, revenue, expenditure, and valuation of local authorities in each State and in the Commonwealth during the year 1910. It may be noted that, excepting in Tasmania, the metropolitan water supply systems are not under municipal control; the particulars given of revenue and expenditure for the five States other than Tasmania do not, therefore, include revenue and expenditure on account of these systems.

### NUMBER, REVENUE, EXPENDITURE, AND VALUATION OF LOCAL AUTHORITIES IN EACH STATE, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wth.
No. of local authorities† ...	324	206	164	175	147	51	1,067

#### RECEIPTS.

Rates—	£	£	£	£	£	£	£
General ... ..	1,200,714	999,799	383,054	160,607	149,576	95,387	2,989,137
Other* ... ..	171,900	102,066	60,654	48,479	43,258	52,363	478,720
Government grants ...	357,036	187,323	14,128	164,145	74,638	35,616	832,886
Loans† and other sources	506,028	480,426	219,513	89,069	244,107	87,994	1,627,137
Total ... ..	2,235,678	1,769,614	677,349	462,300	511,579	271,360	5,927,880

#### EXPENDITURE.

Works, services, etc. ...	1,601,907	1,159,735	431,669	308,287	280,290	155,245	3,937,133
Interest on loans and overdrafts ... ..	162,686	206,355	14,312	7,142	39,105	36,864	466,464
Redemptions, sinking funds, etc. ... ..	††23,621	46,439	30,728	6,398	29,710	21,104	158,000
Administration ... ..	297,301	163,435	64,983	41,694	44,819	34,586	646,818
Other ... ..	**138,695	209,652	122,231	85,897	120,338	18,309	695,172
Total ... ..	2,224,210	1,785,616	663,973	449,418	514,262	266,108	5,903,587

#### VALUATIONS.

Capital value of property	§153,465,234	265,088,727	§149,797,830	68,214,887	§20,502,266	30,924,993	
Annual value of property	††2,346,399	14,225,349		34,084,034	§1,304,157	1,459,917	

† Including particulars for all areas controlled by local governing bodies responsible for the construction and maintenance of roads and streets, such area being variously known in the several States as cities, towns, boroughs, shires, municipalities, road districts, etc. \* Exclusive of rates for water-supply and sewerage in metropolitan and most other principal towns, such rates being collected by special boards or general Government. † Exclusive of loans in connection with extraordinary works of construction. †† Sydney only. \*\* Including redemptions, sinking funds, etc., for municipalities other than Sydney. § Unimproved capital value. || Not available. § Municipalities only. \*\* Exclusive of three municipalities.

3. **Local Government Loans, 1910.**—The following table gives particulars for each State of loans raised by local authorities during the year 1910, of loans current at the end of that year, of liability on account of interest and sinking fund, and of loans maturing during 1910 :—

**PARTICULARS OF LOANS RAISED BY LOCAL AUTHORITIES, 1910.**

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Loans from General Government—							
Raised during year ...	...	...	25,932	...	15,600	17,060	58,592
Current at end of year ...	...	196,184	359,381	...	76,050	272,395	904,010
Loans from other sources—							
Raised during year ...	717,140	396,335	*	74,250	42,086	35,482	*
Current at end of year ...	4,685,008	4,570,954	*	195,465	770,394	585,583	*
Total—							
Raised during year ...	717,140	396,335	*	74,250	57,686	52,542	*
Current at end of year ...	4,685,008	4,767,138	818,364	195,465	846,444	857,978	12,170,397
Current loans, exclusive of those obtained from general Government, raised within the C'wealth	3,604,402	4,570,954	*	191,565	770,394	...	*
Annual liability on account interest	183,978	204,331	18,752	7,862	39,209	37,584	491,716
Total sinking fund at end of year	290,995	837,581	33,074	25,293	171,451	104,433	1,462,827
Amount loans maturing during year							
Redeemed ...	...	*	†	3,632	7,950	31,406	*
Renewed ...	90,837	*	*	4,200	...	400	*

\* Not available. † In the case of loans from Government the periodical payments include interest and sinking funds.

## SECTION XXVII.

## INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

## § 1. Development of Trades Unions in Australia.

1. **General.**—In Australia, industrial unionism paved the way for industrial legislation. Conditions of employment were on the whole favourable to the investigation of industrial problems; and experimental legislation was possible because of the simplicity and directness of the aim of those engaged in industrial occupations. Moreover, the non-existence of the complexity of the problems and of the organisation of older countries does not interpose difficulties which might otherwise operate. Hence rapid changes in laws regulating industry occur and are likely to occur. To a great extent the trades unions were responsible for these laws. They steadily and continuously urged an amelioration of the condition of the working man, and by organisation and discipline they presented a united front to opposing forces, and attained many advantages by a recognition of the principle that unity is strength. Their efforts have resulted in improved conditions, particularly short hours, a healthier mode of life, and safeguarding against accident. One great aim of present-day industrial legislation has been said to be to extend "the reasonable comforts of a civilised community" to those engaged in every branch of industry. The standard of wages must therefore be maintained at a satisfactory level. Large organisations have been able to attain their ends by force of numbers, and, in the case of the great bulk of the artisan and similar classes, through the solidarity of their unions. The smaller and less perfectly organised industries, unable to maintain an effectual struggle with hope of success, are now receiving, by legislative enactment, the benefits already accrued to the trades unions. Industrial organisation by means of unions now tends to embrace all classes of wage-earners.

While the demands of the early unionists have almost in their entirety been conceded by the employer, unionism nevertheless continues. Industrial legislation has greatly restricted industrial warfare, but it has not yet reached the stage when conflicts between employer and employees cease. It aims at a satisfactory adjustment of industrial differences, without derangement of the economic system, nevertheless strikes sometimes occur.

Each State of the Commonwealth has enacted, with considerable elaboration, legislation respecting trade unions and respecting the regulation of the conditions of industrial life, particularly those of factory employment; and has also regulated the hours of business for the great majority of shops. Machinery for the regulation of wages and other matters connected with employment has also been established by legislation.

At the present time there is an obvious tendency to adjust such matters throughout Australia on uniform lines. The industrial condition of any State of the Commonwealth naturally reacts quickly on any other State. This is one of the consequences of a unified tariff, and of the fact that the general economic conditions of one part of the Commonwealth must necessarily affect very intimately every other part. An expression of the intimacy of these economic and industrial relations of different parts was seen, for example, when the Arbitration Court in New South Wales refused to fix wages in the boot trade in that State at a higher rate than that fixed by the Wages Board in Victoria, because of the additional burden which such a rate would place on local

manufacturers. Collective bargaining is encouraged, through the medium of legal tribunals where necessary, argument and diplomacy taking the place of open strife. Legislation gives legal form and status to the unions, and allots to them legal responsibility. The workman is encouraged, and in some cases compelled, to treat with his employer through his union, and the industrial courts of some States are authorised to direct that preference be given to unionists.

**2. History of Unionism in Australasia.**—(i.) *Commencement of Unionism: the Eight Hours System.* The first trade union in Australia was the "Operative Masons' Society," established in Melbourne in 1850. In 1851 a branch of the "English Amalgamated Society of Engineers" was founded in Sydney. For many years the only unions existing were practically those formed by the several branches of the building trades. They were all subject to the English law prohibiting conspiracies and combinations in restraint of trade, though it does not appear that such law was ever put in force in Australia. The main object of the early unions in Australia was the limitation of the working week to forty-eight hours. The minor and friendly society benefits that were usual amongst the unions of older countries were also desired; but the chief aim was the establishment of the eight hours principle, and that aim for many years was the chief link between the unions. It is difficult to obtain detailed information concerning the unions prior to trade union legislation, but their early history generally resolves itself into an account of the early efforts put forth by metropolitan operatives to secure the limitation of the working day to eight hours. The desire to restrict Chinese immigration operated as a further incentive to combined effort. For the restriction to be effective, co-operation between the colonies was necessary. The question therefore promoted enlargement of view, and fostered amongst the workmen of Australia the sense of community of interest.

(ii.) *New Zealand.* The system was first put into practice in Australasia in 1848 by the "Otago Association," which purchased an area of land upon Port Chalmers, N.Z., and proceeded to build the town of Dunedin, under a system which recognised the eight hours day, thus instituting, in the New World of the south, that period of toil as the limit of the working day. Thus the system began voluntarily in New Zealand long before the unions that demanded and acquired it in Australia had come into existence. But many years elapsed in the Dominion before trades unionism became an established fact. The first Congress of New Zealand Trades was held in 1885. In that year, too, the general celebration of the eight hours' principle by the combined trades was inaugurated.

(iii.) *New South Wales.* In New South Wales, the operative masons obtained the eight hours concession in 1855, after a strike; but little development of the movement was noticeable until 1871, in which year four eight-hour trades—the brickmakers, stonemasons, labourers, and carpenters—inaugurated the annual celebration.

(iv.) *Victoria.* The first Melbourne Eight Hours' procession was held in 1856, the trades taking part being the masons, bricklayers, carpenters and joiners, plasterers, painters, and slaters. In the following year nine trades and about 700 men took part in the function; but the principle of the Eight Hours' Day had been recognised, and new unions were quickly established under the influence and guidance of the pioneers of the movement.

(v.) *Queensland.* After the fever of the gold rush to the Fitzroy River had subsided, settled conditions prevailed in the building industry, and the trades, being well established and organised in Queensland, celebrated their inaugural festival of the eight hours in 1866. In Brisbane, as in Melbourne, the pioneer trade was the stonemasons'.

(vi.) *South Australia.* In South Australia, the establishment of the eight hours system by the unions was accomplished in 1873, the building trades, represented by the stone-cutters, painters, and carpenters, again being the leaders.

(vii.) *Western Australia.* The discovery of gold in Western Australia caused rapid development in the infant cities and towns of that State, and mechanics found abundant employment in the building trades. Unions were soon formed, and the eight hours became an established system in 1896.

(viii.) *Tasmania.* Trade unions were established in Tasmania in 1874, the shipwrights of Hobart being the pioneer society. Here, as on the mainland, the eight hours' day was the chief aim of the operatives, and here, as in Sydney, it was conceded only after a strike. Within a few years, the general system of trades unions was instituted. The inaugural celebration of the system was celebrated in 1890.

(ix.) *The System Universal throughout Australasia.* No provision for eight hours was made in the original documents which set out the conditions of labour under which the members of the Otago (N.Z.) Association were to work in 1848. It was intended to insert a clause embodying the principle, but it was found that such a clause would be inoperative, as contracts to bind free settlers to serve under any conditions of labour beyond the seas were not provided for by any Imperial Statute. The system, however, was tacitly agreed to by both parties, and quietly and voluntarily the eight hours' day was established. Not so amicable were the methods by which it was acquired in the other colonies. There had to be unions of men and unions of trades, before the requisite forces were available to overbear opposition to the system, and, at any rate in two cases, the tradesmen resorted to strikes before the concession was granted. Generally it may be said that trades unions in the Commonwealth sprang out of the desire for an eight hours' day; and with the Western Australian celebration of 1896, trades unionism, with its eight hours' charter, completed its circuit of the Commonwealth. From 1880 to 1890 there was in the States where industry was systematised great activity in the organisation of labour, more particularly at the end of that period. In sympathy with the widespread industrial unrest in England the occurrence of similar unrest in Australia drew the wage-earners into the unions in large numbers.

(x.) *Organisation of Unions.* The first regular association of unions in Australia was the Trades Committee in Melbourne, formed in 1859, which afterwards became the present Trades and Labour Council. Similar councils now exist in all the States. Composed of delegates from the unions, they exercise a general care over the interests of their members.

(xi.) *Union Acts.* The Trade Union Acts of England and the collateral Conspiracy and Protection of Property Act have been copied by the States, the Acts also providing for unions of employers. Except in Western Australia, the latter provision has been but slightly utilised, as apparently it offers no well-defined inducement. South Australia adopted the Acts in 1876, New South Wales in 1881, Victoria in 1884, Queensland in 1886, Tasmania in 1889, and Western Australia in 1902.

The Acts referred to provide for the legal recognition of combinations which come under the definition of trade unions; the registration of unions of seven or more persons, the registration of councils or other bodies to which registered trade unions are affiliated, the vesting of union property in registered trustees, with penal provisions in respect of defaulting officers. The registered unions are required to furnish annual returns of members and funds to a special department.

**3. Operations and Organisation of Unions subsequent to the Acts.—(i.) Unions.** Except as hereinafter mentioned, the Unions do not avail themselves of the Trade Union Acts to any large extent. Information concerning them in some States is not at present available, since they do not divulge their membership and funds. The figures given for registered trade unions must not therefore be regarded as affording any criterion by

which the present position of unionism may be judged. In some States there is a considerable difference between the numbers of registered and unregistered unions, as, for instance, in Victoria, where there are 127 unions in Melbourne, and only three are registered.

The failure to register under the Trade Union Acts does not deprive the unions of the privileges conferred by the Conspiracy Acts.

(ii.) *Workmen and Employers in Unions.* Available statistics at present do not shew what proportion of Australian workmen are members of trade unions.

(iii.) *Concerted Action.* The consummation of the eight hours' system, at which the early unions had aimed, was followed by demands for further concessions and privileges. An intercolonial congress of delegates of trades unions, modelled upon a similar conference of labour organisations in Great Britain, was first held in Sydney in 1879. At the second congress in Melbourne, in 1884, sixty-nine delegates from New South Wales, Victoria, and South Australia were present, representing forty-one unions, branches, or societies. Following the methods of European associations the Australian unions sought to achieve an improved condition for their members by the establishment of rules concerning minimum wage, limited hours of toil, the restriction of the number of apprentices and improvers, and the prohibition of the employment of non-union labour; political reforms, such as payment of Members of Parliament, "one man one vote," were also agitated. Some of the unions refuse to admit to membership any but skilled journeymen, on the ground that their object is to encourage the attainment of proper skill.

(iv.) *Representation in Parliament.* It was during the decade 1880-1890 that the trade unions of Australia espoused direct legislative representation and advocated State intervention between employer and employee. This policy has been called "new unionism." In New South Wales, trade unions obtained direct representation in Parliament in 1881, and again in 1883. A resolution affirming the desirability of Parliamentary representation of labour being carried at the congress of 1884, members representing the special interests of the wage-earners were elected to the Legislatures of some of the States, but little action was taken by the unions to obtain representation by men chosen from among their own ranks until after the great labour troubles of 1890-1892. In that period serious strikes occurred in the maritime, shearing, and mining industries, and it was then that the Labour party proper was formed. One direct result of the outbreak was the recognition of the desirability of peaceful settlement of disputes. The political labour party was accordingly organised, and has since held considerable power in most of the States, frequently occupying the Treasury benches. In 1904, 1908-9, and 1910-12 Labour Governments occupied the Commonwealth Treasury benches, the elections held in April, 1910, having resulted in the Labour party gaining an absolute majority in both of the Federal Houses of Parliament. The present Governments in New South Wales and Western Australia are Labour. South Australia has also had a Labour Government; and in Victoria, Queensland, and Tasmania the Labour party is an important element in Parliament.

Triennial federal conferences laid down a policy for the party, but at present there is no authoritative Commonwealth organisation, and the policy is not binding upon a State league. The Political Labour Council controls political and the Trades Hall Council trade union matters. The former consists of delegates from both unions and "branches." The branches are coterminous with State electoral districts, and nominate candidates for those districts. Candidates for the Commonwealth Senate are balloted for by all league members in the State, and for the Commonwealth House of Representatives by the branches in the constituency.



**4. Registered Trade Unions.**—(i.) *Unions of Employees.* The benefits conferred by registering Trade Unions are not, in some of the States, held in much repute; consequently the statistics of registered trade unions of employees not only do not represent the position of unionism, but, in addition, the statistics themselves for past years are so defective as to be practically valueless. The particulars furnish no reliable indication of the numerical and financial position of Trade Unions. It will be seen that some of the registered unions fail to supply returns; this non-supply may lead to cancellation of the registration. Some of the unions have obtained the cancellation of their certificates of registration, the apparent reason being that they proposed registering under the Commonwealth Conciliation and Arbitration Act. In other States, as New South Wales, considerable activity is displayed in the formation of new unions; the principal reason is the general desire of workers to obtain a status under the Industrial Disputes Act, registration under the Trade Union Act being a condition precedent, as far as new unions are concerned. The industrial legislation of Victoria, on the other hand, offers no special inducement to workers to organise into unions, since the Wages Board system extends the benefits of awards to all individuals engaged in the industry dealt with. The figures at the end of 1910 were as shewn hereunder:—

#### REGISTERED TRADE UNIONS OF EMPLOYEES, 1910.

State.	No. of Unions.	No. of Members.	Receipts.	Expenditure.	Funds.
			£	£	£
New South Wales ...	171	129,544	128,433	122,223	98,758
Victoria ...	3	82	63	4,766	187
Queensland ...	37	18,522	25,790	25,428	10,541
South Australia ...	24	2,818*	5,356*	4,403*	12,951*
Western Australia ...	130†	20,429†	48,649†	47,028†	34,853†
Tasmania ...	Nil	...	...	...	...
Commonwealth ...	365	171,395†	208,291†	203,848†	157,290†

\* Returns for 9 unions only, 15 having failed to furnish returns. † Industrial unions registered under the Arbitration Acts. ‡ Excluding 15 unions in South Australia.

(ii.) *Unions of Employers.* At the close of 1910 there were in New South Wales three unions of employers, with 802 members; in Queensland five, with 246 members; in South Australia one, with 22 members; and in Western Australia forty-six, with 444 members.

**5. Registration under Industrial Arbitration Acts.**—Western Australia, and New South Wales up to 30th June, 1908, were the only States with Industrial Arbitration Acts under which industrial associations could be, and actually were, registered. The number of registered unions in New South Wales shewed a gradual increase from 1902 to 1907, the figures in the latter year being 109 unions of employers, with 3165 members, and 119 unions of employees, with 88,075 members. Under the Industrial Disputes Act, which succeeded the Arbitration Act of 1901, the information is not required to be furnished. Since the Act of 1908 has operated, industrial organisation has proceeded rapidly, owing to a very evident general desire on the part of the workers to obtain the status necessary to entitle them to the advantages offered by the Act. In Western Australia, the employers' unions numbered 45, with 441 members, in 1904; 59 unions, with 520 members, in 1905; 57 unions, with 534 members, in 1906; 56 unions, with 552 members, in 1907; 48, with 409 members, in 1908; 47, with 408 members, in 1909; 46, with 444 members, in 1910. Unions of employees have shewn a tendency to decline in late years. At the end of 1904 and 1905 there were 140, with 15,743 and 15,461 members respectively; in 1906 there were 130 unions, with 16,015 members; in 1907, 121 unions,

with 14,544 members; in 1908, 121 unions, with 15,187 members; in 1909, 122 unions, with 17,282 members; and in 1910, 130 unions, with 20,429 members. These figures include councils and associations. Registration under Commonwealth legislation began in 1906. In that and the four following years, there was but one union of employers, with 6 members. The unions of employees registered were 20 in 1906, with 41,413 members; 24, with 57,306 members, in 1907; 37, with 69,536 members, in 1908; 7, with 14,161 members, in 1909; 10, with 3760 members, in 1910.

## § 2. Laws Relating to Conditions of Labour.

1. **Tabular Statement of Statutes affecting Labour.**—The Statutes in force at the beginning of 1912 in the several States of the Commonwealth, which, more or less directly, affect the general conditions of labour, are shewn in the table below. Where merely an incidental reference to labour conditions is made in a statute, as is the case with, *e.g.*, the Hawkers and Pedlars Act 1892 of Western Australia, or the Firms Registration Act 1899 of South Australia, the Act is not included in the table.

LABOUR LAWS—TABLE OF STATUTES IN FORCE IN AUSTRALIAN STATES, 1912.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
Factories & Shops 1896	Factories and Shops 1905 (2)	Factories and Shops 1900	Factories 1907	Factories 1904 (2)	Factories 1910
Factories & Shops 1909	Factories and Shops 1907	Factories and Shops 1908	" 1908	Early Closing 1902	" 1911
Early Closing 1899	Factories and Shops 1909	Wages Boards 1908	" 1910	Early Closing 1904 (2)	Wages Boards 1910
" 1900	Factories and Shops 1910 (2)		Early Closing 1911	Early Closing 1911	Wages Boards 1911
" 1906				Seats for Shop Assistants 1899	Chimn'y Sweepers 1882
" 1910					Shops Closing 1911
Saturday Half Holiday 1910					
Minimum Wage 1908					
Clerical Workers 1910					
Industrial Arbitration Act 1901	—	—	Conciliation 1894	Industrial Conciliation and Arbitration 1902	—
Industrial Arbitration Act 1905				" " 1909	
Industrial Disputes 1908					
Industrial Disputes 1909					
Industrial Disputes 1910					
Industrial Arbitration 1912					
Mines Inspection 1901	Mines 1897	Mining 1898	Mining 1893	Mines Regulation 1906	Mining 1900
Coal Mines Regulation 1902	Coal Mines Regulation 1909	" 1901		Coal Mines Regulation 1902	" 1911
Coal Mines Regulation 1905		Mines Regulation 1910		Mining 1904	
Coal Mines Regulation 1910					
Miners' Accident Relief 1900					
Miners' Accident Relief 1901					
Miners' Accident Relief 1910					
Contractors' Debts 1897	Employers and Employees 1890	Contractors' & Workmen's Lien 1906	Workmen's Liens 1893	Workmen's Wages 1898	—
	Employers and Employees 1901	Wages 1870	Workmen's Liens 1896		
		" 1884			
Attachment of Wages Limitation 1900	—	Wages (as above)	Wages Attachment 1898	—	Wages Attachment 1900

## LABOUR LAWS—TABLE OF STATUTES.—Continued.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
Public Health 1896	Health 1890	Health 1886 " 1890 " 1900	Health 1898 " 1909	Health 1898 " 1906 " 1911	Public Health 1903 Public Health 1910
*Truck 1900 " 1901	—	See Factories	See Factories	*Truck 1899 * " 1900 * " 1904	—
Shearers' Accommodation 1901	—	Shearers' and Sugarworkers' Accommodation 1905 Do. 1906	Shearers' Accommodation 1905	—	—
—	Closer Settlement (Workers' Homes) 1904	—	—	—	—
—	Boilers' Inspection 1906	Inspection of Machinery & Scaffolding 1908	Steam Boilers and Engine Drivers 1911 Lifts' Regulation 1908 Scaffolding Inspection 1907 Scaffolding Inspection 1908	Inspection of Machinery 1904	Inspection of Machinery 1902 " " 1909  White Phos. Matches Prohibition 1911
—	Servants' Registry Offices 1897	—	—	Employment Brokers 1909	—
Trade Unions 1881	Trade Unions 1890	Trade Unions 1886	Trade Unions 1876	Trade Unions 1902	Trade Unions 1889
Masters & Servants 1902 Apprentices 1901	Employers and Employees 1890 " 1901 Masters and Apprentices 1890	Apprentices 1828 " 1844 Master and Servants 1861	Masters & Servants 1878 Defence of Workers 1909	Masters and Apprentices 1873 Masters & Servants 1892	Masters & Servants 1856 " " 1883 " " 1884 " " 1887
Employers' Liability 1897	Employers and Employees 1890 (Employers' Liability) " " 1901	Employers' Liability 1886 Employers' Liability 1888	Employers' Liability 1884 Employers' Liability 1889	Employers' Liability 1894	Employers' Liability 1895 Employers' Liability 1898 Employers' Liability 1903
Workmen's Compensation 1910	—	Workers' Compensation 1905 Workers' Compensation 1909  Workers' Dwelling 1909	Workmen's Compensation 1911	Workers' Compensation 1902  Workers' Compensation 1909  Workers' Homes 1911 Navigation 1904 " 1907 Merchant Shipping Act Application 1903	Workers' Compensation 1910
Bankruptcy (preference wages) 1898 to	Insolvency 1897	Insolvency 1874 Insolvency 1876	Insolvency 1886 " 1887 " 1896	Bankruptcy 1892 " 1898  Pearl-Shell Fishery Regulation 1875 Fisheries 1905 " 1911  Conspiracy and Protection of Property 1900	Bankruptcy 1870 Bankruptcy 1899  —

\* The "Truck" system, as applied to labour, was one by which the master obtained the labour of his servants in exchange for goods or commodities on which it is stated he generally secured a profit. The system is now almost entirely suppressed by the various statutes enacted. † New South Wales Acts, unrepealed in Queensland after Separation in 1859.

**2. Benefits sought to be Conferred by the Acts.**—(i.) *General Provisions.* The legislation enacted has generally had for its object the shortening of hours, improving and fixing standard rates of wages, provision of sanitary accommodation, ventilation and cleansing of premises, safeguarding from accident, and general amelioration of the conditions of labour, particularly that of females and children, in factories. The principal provisions of these statutes are set out in the table hereinafter.

(ii.) *Historical.* The first Australian Factories Act was passed in 1873 in Victoria, and became law on 1st January, 1874. It was entitled "The Supervision of Workrooms and Factories Statute," and contained only six sections. The existing Victorian Act, passed in 1905, contained originally 163 sections, and is now extended by four amendments of 35, 40, 6, and 54 sections respectively. There are, moreover, numerous regulations in force under its authority. The three principal provisions in the Act of 1873 were (a) that any place in which not less than ten persons were engaged for hire in manufacturing goods should be constituted a factory; (b) that such factories as to building, sanitation, etc., should be subject to regulations made by the Central Board of Health; and (c) that no female should be employed for more than eight hours in any one day without the permission of the Chief Secretary. The administration of the Act was entrusted entirely to the local Boards of Health, and the system was found to be less effective than was hoped. The conditions which have given rise to trouble in the old world tended to reproduce themselves in the young and growing industries of the States. Factory workers had to contend with the absence of security for a living wage; unsatisfactory sanitary surroundings; and unchecked and unscrupulous competition of Chinese in certain trades. The advocacy of legislation to control the conditions of employment became pronounced in Victoria in 1880, and a strike of tailoresses in Melbourne in 1882 led to a recognition of the real state of affairs. As a result of unsatisfactory working under the local governing bodies, and on account of agitation of the operatives, a commission was appointed in 1883, and reported the necessity of legislation for the regulation of factories, and in particular pointed out the fact that men were compelled to toil for as many as eighteen hours and women sixteen hours a day. It also shewed that the condition of out-workers was very undesirable, and that the apprenticeship system was frequently used to obtain labour without remuneration, apprentices being dismissed upon asking for payment at the end of their time. The Factories and Shops Act 1884, while providing for the suppression of many evils in respect of accommodation and lengthy hours, did not touch the two last mentioned. It provided for Government inspection, and also that six persons should constitute a factory if the premises were situated in a city, town or borough. In 1887 a short amending Act was brought in to remedy some defects that were found to exist. Its principal provision was that any place in which two or more Chinese were engaged should be deemed a factory. In 1893 a further enactment reduced the number of persons constituting a factory to four. Another Royal Commission sat in 1895, resulting in the Act of 1896, which dealt with matters previously untouched, and the system of regulation was carried on by the Act of 1900 and the complete codification of the law in 1905.

Similar conditions were found to prevail in other States. New South Wales and Queensland adopted regulative measures in 1896 and subsequent years, and South Australia in 1894, 1900, and 1906. Western Australia followed suit in 1902 and 1904. Tasmania adopted the Victorian Act of 1873 in 1884, with a small extension in 1905; and in 1910 enacted Factories, Wages Boards, and Workers' Compensation Acts.

The same remarks apply in a general way to the condition of employees in shops.

**3. Limitation of Hours.**—(i.) *Factories.* As already remarked, the adoption of the eight hours' system for adult males has generally been the outcome of the representations made by the trade unions. Except in New Zealand, there is no general legislation to enforce the principle, although there is now a general recognition of it. A week of forty-eight hours is the usual working week. The larger unions, however, have lately moved for a *net* day of eight hours, with Saturday half-holiday, no loading of other week days

being permitted by way of compensating for the Saturday afternoon. Under this scheme there are, for five days, equal divisions for periods of labour, recreation, and rest, and four hours' work on Saturday, making a working week of forty-four hours. In the majority of occupations, forty-eight hours weekly is the recognised limit of work. On the establishment of Wages Boards and Arbitration Courts, in the States where those institutions exist, the authorities thus created adopted the rule as part of their determinations and awards wherever it seemed reasonably practicable. In some of the larger classes of building trades, the hours have been reduced to forty-four a week, and in some technical and specialist trades, a lower maximum has been fixed, such for example, as the type-setting machine operators in Victoria, for whom the maximum has been fixed by the Wages Board at forty-two hours weekly. Reasonable provision is made by Statute or award for work performed outside the scheduled hours. Organisations of employees, however, oppose overtime in any industry until all the operatives in that industry are working full time.

In the case of women and children there has been very general enactment in the States of the forty-eight hours' limit, and in addition, the maximum periods of continuous labour, and the intervals of cessation therefrom, have been prescribed in all the States. New Zealand has fixed a weekly maximum of forty-five hours for females and boys under 16. The first enactment of the forty-eight hours' limit in Australia was in 1873, when the Parliament of Victoria fixed that period for women and girls in factories.

(ii.) *Shops.* All the States have statutes containing provisions respecting the hours during which shops in large centres may be kept open for business. These provisions, in effect, not only limit the hours during which shop-hands may be employed, but apply also where the shops are tended by the proprietor alone, or by himself and family, with, however, certain exceptions, such as exist in the State of Victoria. In that State shops wherein not more than one assistant, whether paid or not, is employed, are permitted to remain open for two hours a day longer than other shops of the same class. The object of this is to relieve the hardship which exists for such persons, for example, as widows who are wholly dependent for a livelihood upon the casual trade of small shops. It is, however, reported that little or no benefit has accrued from the permission. In New South Wales, Victoria, Queensland, South Australia, and Western Australia the closing time of shops, except those specially exempted, is 6 p.m. on four days of the week, 10 p.m. on one day (except 9 p.m. in South Australia), and 1 p.m. on one day—thus establishing a weekly half-holiday. In Western Australia the opening hour is fixed at 8 a.m. In addition to fixing the closing hour, the total daily and weekly working hours are delimited in the case of women and children. In some States, butchers' shops must be closed an hour earlier than other retail establishments, the reason being the early hour at which assistants must start to attend to the markets and early morning trade.

(iii.) *Hotels, etc.* Establishments, the opening of which in the evening is presumably necessary for public convenience—such as hotels, restaurants, chemists' shops, etc.—are required to remain open for longer hours or are permitted to do business during hours prohibited in other establishments.

(iv.) *Half-holidays.* The provisions of the early closing laws differ somewhat in each State, but the main objects, namely, the restriction of long hours of labour, are identical throughout. Formerly, in some of the States, there were, and there are still in others, provisions making the early closing of a business, or the selection of a day for a half-holiday, dependent upon the option of the majority of the business people concerned, or upon the local authority. The anomalous results of the system whereby shops on one side of the street bounding two municipalities were open, when those upon the other side were closed, led to the introduction of the compulsory system, whereby the hours of business are absolutely fixed by statute. In Queensland, the day of the weekly half-holiday is fixed for Saturday. In Victoria also the Saturday half-holiday became compulsory in 1909, and in New South Wales in the following year, and there is a strong movement throughout the Commonwealth in favour of closing on the afternoon of that day.

(v.) *Exempted Trades.* The hours for shops exempted from the general provisions of the Acts are also prescribed, and special holidays are provided for carriers.

**4. Other General Conditions of Labour.**—Measures for the protection of life, health, and general well-being of the worker, tabulated hereunder, exist in most of the States. Though in some instances founded upon English legislation, many of the provisions are peculiar to Australia. Despite experience and continued amendment they have not even yet attained to a settled form. Of the Australian States, Victoria originally had the most complete system of industrial legislation. Other States gradually adopted the Victorian statutes, either *en bloc* or with amendments suggested by local conditions. Western Australia followed very closely the legislation of New Zealand, where also the measures for the amelioration of the industrial conditions are enforced by law.

**5. Administration of Factories and Shops Acts.**—The provisions of Factories and Shops Acts and of the Early Closing Acts in some of the States are consolidated under a single Act, but in others are separate enactments. The chief provisions of the principal Acts for registration, administration, record-keeping, etc., and of regulations under those Acts, are set out in the following summary:—

- (a) Factories are defined to be places where a certain number of persons are employed in making or preparing goods for trade or sale, or in which steam or other power is employed. In some States the employment of a Chinese, in some of any Asiatic, constitutes the place a factory.
- (b) A Minister of the Crown administers the Act in conjunction with a Chief Inspector of Factories. Inspectors visit the factories with full powers of entry, examination, and enquiry; these are of both sexes, females being employed in that portion of the work where a woman is particularly necessary. Broadly speaking, these powers confer upon the Inspector the right to enter, inspect, and examine, at all reasonable hours by day and night, any factory where he has reason to think anyone is employed; to take a police constable, if necessary, to assist him in the execution of his duty; to require the production of all certificates, documents, and records kept by the occupier, in accordance with the terms of the enactments; to examine, either alone or in the presence of any other person, every person whom he finds in a factory; to make whatever examination he deems necessary to ascertain whether the provisions of the Act are complied with.
- (c) Registration of factories before occupation is obligatory. Description of premises and statement of the work to be done must be supplied, and a certificate of suitability of premises obtained.
- (d) A record of all employees, giving the names, ages, wages, and work of each under a certain age (18, 20, 21, etc.) must be kept and filed in the Chief Inspector's office.
- (e) Names and addresses of district inspectors and certifying medical practitioners must be posted; also the working hours, the holidays, and the name, etc., of the employer.
- (f) Records of out-work must be kept, containing the names and remuneration of workers, and stating the places where the work is done. Out-workers are required to register.
- (g) Places in which only the near kin of the occupier are employed are generally exempt from registration.
- (h) Meals may be prohibited in workrooms, etc. In some States occupiers are required to furnish suitable mealrooms.
- (i) The employment in factories of young children is forbidden, and medical certificates of fitness are required in the case of young persons under a certain age. Special permits, based on educational or other qualifications, may be issued for young persons of certain ages.

- (j) Guarantees of an employee's good behaviour are void unless made with the consent of the Minister.
- (k) Persons in charge of steam engines or boilers must hold certificates of service or competency.
- (l) Provision safeguarding against accident is made for the fencing off and proper care of machinery, vats, and other dangerous structures. Women and young persons are forbidden to clean machinery in motion or work between fixed and traversing parts of self-acting machinery while in motion; and dangerous trades are specified in which a minimum age is fixed. Notice of accidents must be sent to the district inspector. (Dangerous trades are generally under the administration of Boards of Health.)
- (m) Provision is made for the stamping of furniture, in order to disclose the manufacturer, and whether it is made by European or Chinese labour.
- (n) Minimum wage provisions are inserted. Premiums to employers are forbidden.
- (o) Sanitation and ventilation must be attended to, and fresh drinking water supplied. Separate and adequate sanitary conveniences for each sex are required.
- (p) Shopkeepers are required to provide proper seating accommodation for female employees. (In some States this is the subject of special legislation.)
- (q) A dressing-room for females must be provided in factories the manufacturing process of which requires a change of dress.
- (r) Adequate protection must be made against fire and efficient fire-escapes provided.
- (s) Wide powers of regulation are granted to the Executive and heavy penalties imposed, including a penalty by way of compensation to any person injured or the family of any person killed through failure to fence machinery and other dangerous structures.

6. **Registered Factories.**—The number of establishments registered under Factories Acts is shewn below, and is of interest as indicating the extent to which the Factories Acts apply:—

#### FACTORIES REGISTERED UNDER ACTS, 1910.

State.	No. of Registered Factories.	Numbers Employed.		
		Males.	Females.	Total.
New South Wales ...	4,533	54,847	25,125	79,972
Victoria ...	5,362	48,765	34,288	83,053
Queensland ...	2,127	18,063	7,968	26,031
South Australia ...	1,676	13,252	5,148	18,400
Western Australia ...	858	8,148	2,549	10,697
Tasmania*	...	...	...	...
Commonwealth ...	14,556	143,075	75,078	218,153

\* General Factories Acts not operative before 1911.

7. **Comparative Statement of Factories Law in Australia and New Zealand.**—The tables which follow shew at a glance the chief provisions of the Factories and Shops Acts in the Commonwealth and in New Zealand:—

## COMPARATIVE VIEW OF LEADING FEATURES OF THE LAW

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
Principal Acts	Factories and Shops 1896. " " 1909. Minimum Wage 1908.	Factories and Shops 1905 (2). " " 1907. " " 1909. " " 1910 (2).	Factories and Shops 1900. " " 1908. Wages Boards 1908.
Application of Acts— Limitations	In districts proclaimed Not applicable where all the workers are members of the same family. Not applicable to woolsheds, dairies, or ships. Governor may exempt any factory or class of factory in any district.	In cities, towns and boroughs; also shires to which ex- tended. Not applicable to dairying, agricultural, horticultural, viti-cultural and pastoral occupations. Not applicable to laundries attached to religious and charitable institutions.	Only in areas proclaimed. Not applicable to prisons, re- formatories, dairies, shops, mines, agricultural build- ings, and domestic work- shops. Governor may exempt parti- ally or wholly any factory or class of factories in a given district.
Definition of Factory— By Nos. Employed	Four or more.	Four or more.	Two or more (including occupier).
" Asiatics "	Any Chinese.	One Chinese	One Asiatic.
" Power used "	Steam or mechanical.	Steam or mechanical.	Steam or mechanical.
" Special classes included	Laundries, dye-works.	Bakehouses, laundries, dye- works, quarries, clay-pits. Gas & electric light works.	Bakehouses, laundries.
Administration	Minister of Labour.	Minister of Labour.	Home Secretary.
Inspectorate	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination, and enquiry.
Registration	Seven days' prior notice.	Fourteen days' prior notice. Annual re-registration.	Seven days' prior notice.
Outwork	Occupier of factory to keep record, shewing places where work done and rates of payment.	Occupier to keep record of description, quantity, re- muneration, and names. Out-workers must register.	Sub-contractors' premises subject to factory regula- tions. Occupier to keep records shewing places, de- scription, and quality of work; nature and amount of remuneration paid. Out- workers must register. Sub-letting forbidden.
Hours of Work	Adult males—not enacted. Females and young persons —see separate table.	Adult males—not enacted. Females and young persons —see separate table.	Adult males—not enacted. Females and young persons —see separate table.
Meals in Workroom	Minister may forbid while work is going on; he may require provision of a suit- able eating-room.	Forbidden while work going on, unless Inspector permits. Forbidden if dangerous trade conducted.	Minister may forbid meals being taken in factories; he may require provision of suitable eating room.
Employment of Women & Children	See separate table.	See separate table.	See separate table.
Sanitary, Health and Safety Provisions	Factories to be clean, whole- some, and well ventilated. Over-crowding forbidden. Unhealthy persons under six- teen may be suspended from daily work. Avoidance of infection pre- scribed. Factories to be thoroughly cleaned once in fourteen months. Bakehouses not to be used as sleeping places. Seats to be provided for fe- males. Proper necessary precautions to be taken against fire, and efficient fire escapes to be provided.	Factories to be clean, whole- some, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Factories and bakehouses not to be used as sleeping places. Wet spinners must be pro- tected. Efficient fire escapes to be provided, and fire appli- ances kept ready.	Factories to be kept clean, wholesome, and well venti- lated. Over-crowding forbidden. Suspension of work by un- healthy persons may be enforced. Avoidance of infection pre- scribed. Fresh drinking water to be provided. Factories to be thoroughly cleaned once in twelve months. Bakehouses not to be used as sleeping places. Seats to be provided for fe- males. Proper necessary precautions to be taken against fire.
Dangerous Machinery	Must be fenced Employment of women and boys forbidden.	Must be fenced. Employment of women and boys forbidden. First-aid ambulance-chest to be kept on premises.	Must be fenced.
Mini'm Wage per week	4s. No premiums or bonus on be- half of apprentices is per- mitted.	2s. 6d. No premium is to be de- manded from female ap- prentices and improvers.	5s. No premium is permitted from apprentices.



## RELATING TO FACTORIES IN AUSTRALIA AND NEW ZEALAND.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	NEW ZEALAND.
Factories 1907. " 1908. " 1910.	Factories 1904 (2).	Factories 1910.	Factories Act 1901. " " 1902. " " 1905. " " 1906. " " 1910
In places determined by the House of Assembly. Not applicable to domestic servants and agricultural and pastoral pursuits.	In districts proclaimed. Not applicable to mines, dairies, ships, prisons, reformatories, domestic (other than Asiatic) workshops. Governor may exempt any factory.	Whole State. Not applicable to mines, ships, prisons, reformatories, rural industries, charitable institutions. Governor may exempt any factory.	...
Anyone. ... ...	Six or more.  One Asiatic. Steam or mechanical. Bakehouses, laundries.	Four or more.  One Asiatic. Steam or mechanical. Bakehouses quarries.	Two or more.  One alien Asiatic. Steam or mechanical. Bakehouses, laundries.
Minister of Industry.	Minister of Commerce and Labour.	Chief Secretary.	Minister of Labour.
Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.
Twenty - one days' prior notice.	Prior notice. Annual re-registration if Asiatics employed	Twenty - one days' prior notice.	Prior notice.
Occupier to keep record. Out - workers to register names and addresses.	Occupier to keep record of names and addresses, and quantity and description of work done. Sub-letting forbidden.	Occupier to keep record of names and addresses, and quantity and description of work done.	Occupier to keep record shewing names and addresses of out-workers, quality and description of work done, and the nature and amount of remuneration. Sub-contracting in textiles forbidden.
Adult males—not enacted. Females and young persons—see separate table.	Adult males—not enacted. Females and young persons—see separate table.	Adult males—not enacted. Females and young persons—see separate table.	Males over 16: Maximum, forty-eight hours weekly. Overtime of adult males not regulated. Females and young persons—see separate table.
Minister may forbid meals in factories carrying on noxious trades; he may require provision of suitable eating-room.	Forbidden for women and boys, except with Inspector's written permission.	Forbidden where employees working. In certain factories meal room to be provided.	Forbidden for women and boys. If number exceeds four, a suitable meal room is to be provided.
See separate table	See separate table.	See separate table.	See separate table.
Factories to be kept wholesome, clean, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Adequate protection to be made against fire.	Factories and connected yards to be clean, wholesome, and well-ventilated. Over-crowding forbidden. Unhealthy persons may be forced to suspend work. Goods, clothing, etc., to be disinfected where necessary. Fresh drinking water to be provided. Thorough cleaning to be regularly done. Bakehouses not to be used as sleeping places. Efficient fire escapes to be provided and other necessary protection to be made against fire.	Factories to be clean, wholesome and well ventilated. Overcrowding forbidden. Factories may be required to be cleaned once in fourteen months. Factories not to be used as sleeping places. Doors, &c., to be kept clear of obstructions, and fire-prevention appliances kept ready for use.	Factories to be clean, wholesome & properly ventilated. Overcrowding forbidden. Unhealthy persons may be forced to suspend work. Goods, clothing, etc., to be disinfected where necessary. Pure drinking water to be provided. Factories to be cleaned once in fourteen months. Bakehouse not to be used as sleeping place. Satisfactory provision for women and boys to be made against wet and steam in factories where wet spinning is carried on. Efficient fire escapes to be provided.
Must be fenced. Employment of children under sixteen may be forbidden.	Must be fenced. Inspector may prohibit as dangerous machine. Employment of females and boys forbidden.	...	Must be fenced. Inspector may prohibit as dangerous machine.
4s. No premium is to be paid by female apprentices.	...	4s. No premium in respect to employment is permitted.	5s. No premium in respect to employment is to be paid.

## FACTORIES ACTS.—AUSTRALIA AND NEW ZEALAND.

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
Acts Application of Acts	As in preceding table	As in preceding table	As in preceding table
* Ordinary Age of Admission to Factory	14	13	14
Maximum Working Hours of Women and Young Persons { Per week „ day Maximum hours of continuous labour Interval	Females and boys under 16, 48 hours ... Females and boys under 18, 5 hours Do., ½ hour	Females and boys under 16, 48 hours Do., 10 hours Females and boys under 18, 5 hours Do., ½ hour	Females and boys under 16, 48 hours ... Do., 5 hours Do., ½ hour
Prohibited Hours of Work	Girls under 18, 7 p.m. to 6 a.m. Boys under 16, 7 p.m. to 6 a.m.	Girls under 16, 6 p.m. to 6 a.m. Boys under 14, 6 p.m. to 6 a.m. Females, after 9 p.m.	Girls under 18, 6 p.m. to 6 a.m. Boys under 16, 6 p.m. to 6 a.m.
Overtime— Limitation—Per day „ week „ year Continuous	Three hours Three days Thirty days	Three hours One day Twenty-five days	Three hours (Two consecutive days. Fifty-six hrs per wk. not to be exceeded Forty days
Overtime Pay	One and a-half ordinary rate	One and a-half ordinary rate	One and a-half ordinary rate, but never below 6d. per hour
Prohibition of Employment after Childbirth	4 weeks	...	...
Restrictions and Prohibitions of Employment affecting Women and Young Persons in Dangerous Trades { Type-setting Dry grinding and match dipping Manufacture of bricks and tiles Making and finishing of salt Melting or annealing of glass Silvering of mirrors by mercurial process; manufacture of white lead Cleaning of machinery in motion, mill gearing, etc. Charge of lift	Young persons under 16 Young persons under 16 Girls under 18 Girls under 18 Boys under 16; girls under 18 Boys and girls under 18 All females; boys under 18 All females; boys under 16	Boys and girls under 14 Boys and girls under 18 Girls under 18 Girls under 18 Boys under 14; girls under 18 Young persons under 18 All females; boys under 18 ...	... ... ... ... ... ... All females; boys under 18 All females; boys under 16

\* The ages given are those at which admission to factory labour is unrestricted. In some States younger children are admitted if having passed school standards, or by special permit from the Minister or inspector.

## RESTRICTIONS REGARDING WOMEN AND YOUNG PERSONS IN FACTORIES.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	NEW ZEALAND.
As in preceding table	As in preceding table	As in preceding table	As in preceding table
13	14	14	16
Females and boys under 16, 48 hours Do., 10 hours  Do., 5 hours  Do., 1 hour	Females and boys under 14, 48 hours Do., 8½ hours  Do., 5 hours  Do., ½ hour	Females and boys under 16, 48 hours Females, 10 hours Boys and girls under 14, 8 hours Women and boys and girls under 18, 5 hrs. Children, 4 hours Females and young persons, 1 hour	† Females and boys under 16, 45 hours Do., 8½ hours  Do., 4½ hours  Do., ½ hour
Females, after 9 p.m. Boys under 16, after 9 p.m.	Females, 6 p.m. to 8 a.m. Boys under 14, 6 p.m. to 7.45 a.m.	Females and boys under 16, after 9 p.m. ...	Females, 6 p.m. to 8 a.m. Boys under 16, 6 p.m. to 7.45 a.m.
... } Nine hours per week 100 hours  Five-fourths ordinary rate	Three hours Two consecutive days Thirty days  ...	55 hours per week not to be exceeded ...  200 hours (Fruit, jam, etc., factories exempted in certain months) Five-fourths ordi- nary rate	Three hours Two consecutive days Thirty days Four hours, with half-hour interval Five-fourths ordinary rate
...	4 weeks	...	4 weeks
...	Girls under 15	...	Girls under 15
...	...	Boys & Girls under 16	Young persons under 16
...	Girls under 16	Girls under 16	Girls under 16
...	Girls under 16	Girls under 16	Girls under 16
...	...	Females under 18	Girls under 18
...	All females; boys under 18	All females; and boys under 18	Females; boys under 18
All females; boys under 16	All females; boys under 18	...	...
All females; boys under 18	Females under 21; boys under 16	...	...

† In woollen mills in New Zealand females and boys under 16 may work slightly longer hours.



## RELATING TO SHOPS IN AUSTRALIA AND NEW ZEALAND.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	NEW ZEALAND.
Early Closing, 1911	No. 24 of 1902 No. 1 of 1904 No. 52 of 1904 No. 1 of 1912	As for factories Shops Closing 1911	Shops and Offices 1904 " " 1905
...	56 hours per week	...	52 hours per week
Boys and girls under 16, 52 hours Boys and girls under 16, 9 hours (except 11 hours on 1 day)	All persons, 56 hours per week ... One hour interval between noon and 3 p.m. If open after 6.30 p.m., 1 hour for tea	Females and boys under 16, 52 hours Females and boys under 16, 9 hours (except 12 hours on 1 day) Females and boys under 16, 5 hours Females and boys under 16, $\frac{3}{4}$ hour	Females and boys under 18, 52 hours Females and boys under 18, 9 $\frac{1}{2}$ hours ... ...
3 hours 40 days	3 hours 12 days per half-year	3 hours 40 days	3 hours 30 days
4 days, 6 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m.	4 days, 6 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m. (Opening hour not earlier than 8 a.m.)	(not enacted)	4 days, 6 or 7 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m.
Certain classes of shops	Shops such as hairdressers, newsagents, tobacconists, and those selling drugs and edibles	...	Shops concerned with sale of food
...	1 to 3 females	1 to 3 females	Reasonable sitting accommodation for females

manual workers, though restriction is made in South Australia to those receiving less than £5 weekly, and in Tasmania the limit is £3, while miners are exempted from the operation of the Act in New South Wales, being provided for in the *Miners' Accident Relief Act* 1900. The liability of employers covers all cases of injury by accident during employment, and in South Australia it extends also to disablement by industrial diseases. Misconduct of employee exonerates the employer. Notice of accident is to be sent to the employer without delay, and proceedings for compensation must be begun within a reasonable time. In New South Wales, Queensland, and Western Australia the matter is settled by a police magistrate; in South Australia the Arbitration Court makes the award. The minimum amount of compensation in case of death is three years' earnings, or £200 (except in Tasmania, where the amount is £100), whichever is greater, up to a maximum of £300 in South Australia, £200 in Tasmania, and £400 in the other three States concerned. In case of incapacity the minimum compensation is half wages up to £1 a week in New South Wales, Queensland, and South Australia, up to £1 10s. in Tasmania, and up to £2 in Western Australia; the maximum is £400 in Queensland, £300 in South Australia and Western Australia; and £200 in New South Wales and Tasmania. Agreements made by consent, may, under the authority of an official prescribed in the Act, vary its provisions. A lump sum may be accepted in lieu of weekly compensation, and compensation cannot be assigned. The main difference in the provisions of the two sets of enactments is that under the Liability Acts the employee had to show neglect or defect; under the Compensation Acts the employer has to shew misconduct of worker.

10. *Other Acts.*—Other legislation regulating conditions of labour has been enacted by the States. The British *Conspiracy and Protection of Property Act* (38 and 39 Vic., c. 86) has been adopted. Servants' registry offices are placed under adminis-

trative control, and the rates of commission chargeable are fixed by regulation. Power is given to workmen to attach moneys due to a contractor who employs them in order to satisfy a claim for wages, such wages being made a first charge on moneys due to a contractor. Workmen are given a lien for wages over material whereon they are working, even if it becomes part of other property. This is in addition to the common law lien, which ceases when possession of the property is parted with. Workmen's wages are protected from attachment. In Victoria, provision is made for the compulsory resumption of suburban lands to provide workmen's homes.

11. **General Results of Industrial Legislation.**—The results of the legislation described must be sought in the Reports of the Inspectors of Factories of the several States. Generally speaking, the perusal of these reports and of the reports of Royal Commissions which have enquired into the working of the Acts, affords satisfactory evidence that the Acts have, on the whole, effected their objects.

### § 3. Legislative Regulation of Wages and Terms of Contract.

1. **General.**—Two systems, based upon different principles, exist in Australia for the regulation of wages and general terms of contracts of employment. A "Wages Board" system exists in New South Wales, Victoria, Queensland, South Australia, and Tasmania, and an Arbitration Court in Western Australia. In New South Wales, Industrial Arbitration Acts of 1901 and 1905 instituted an Arbitration Court. This court expired on 30th June, 1908, having delivered its last judgment on the previous day. Wages Boards were substituted under the Industrial Disputes Act 1908. There is also the Arbitration Court of the Commonwealth, which has power, however, to deal only with matters extending beyond the limits of a single State. New Zealand has an Arbitration Court for regulating wages.

2. **Wages Boards.**—(i.) *Historical.* This system was introduced in Victoria by the Factories and Shops Act of 1896. The original Bill made provision only for the regulation of the wages of women and children, but was afterwards amended in Parliament to extend the system to adult operatives of both sexes.

The Act of 1896 made provision for the regulation of wages only in the clothing and furniture trades and the bread-making and butchering trades. By an Act of 1900 the operations of the Act were extended to include all persons employed either inside or outside a "factory" or "workroom"—see sec. 4, i. (a) —in any trade usually carried on therein. This section is now in the Act of 1905. The Act of 1907 extended the system to trades and businesses not connected in any way with factories, making provision for the appointment of Wages Boards for metropolitan shop employees, carters and drivers, persons employed in connection with buildings or quarrying, or the preparation of firewood for sale or the distribution of wood, coke, or coal. The Act of 1909 extended the system to the mining industry, and those of 1910 extended the operation of the Acts to shires.

The regulation is effected by a Board, called a Special Board, to distinguish it from the Board of Health. Boards for the regulation of wages in the trades specified in the Act of 1896 are appointed as a matter of course, and by the Executive other Boards are appointed only if a resolution for appointment be passed by both Houses of Parliament. Originally the Board was elected in the first instance, but the difficulty of compiling electoral rolls led to the adoption of the system of nomination, which has proved satisfactory. Beneficial results have followed from the institution of the system, conditions of female labour especially being improved. It is also claimed that sweating has been abolished.

The Board fixes the wages and hours of work and may limit the number of "improvers" to be employed (usually by prescribing so many to each journeyman employed). There is no power in Victoria to limit the number of apprentices employed, but such a power does exist in other States. The Board fixes the wages of apprentices and improvers according to age, sex, and experience, and may fix a graduated scale of rates calculated on the same basis. Apprentices bound for less than three years are improvers, unless the

Minister sanctions a shorter period of apprenticeship on account of previous experience in the trade. The Minister may sanction the employment of an improver over twenty-one years of age at a rate proportionate to his experience. Outworkers in the clothing trade must be paid piece rates. Manufacturers may, by leave of the Board, fix their own piece rates, if calculated upon the average wages of time workers as fixed by the Board.

Licenses for twelve months to work at a fixed rate lower than the minimum rate may be granted by the Chief Inspector of Factories to persons unable to obtain employment by reason of age, slowness, or infirmity. Licenses are renewable.

Penalties are fixed for the direct or indirect contravention of determinations, the obedience to which is ascertained by examination of the records of wages, etc.

A Court of Appeal has power to review determinations of the Boards.

The Acts fix an absolute weekly minimum wage, and the evasion of this provision (such as had occurred regarding females employed in the clothing trade), by charging an apprenticeship premium, is prevented by the prohibition of all such premiums. Until the Minimum Wages Act of 1908 began to operate, this absolute minimum provision did not exist in New South Wales. The Act of 1912 of this State combines the Wages Board and Arbitration Court system.

South Australia enacted the Wages Board system in 1900, 1904, and 1906, but the first-mentioned Act was rendered inoperative owing to the disallowance by Parliament of the regulations necessary for carrying it into effect. The Act of 1904 revived the Wages Board system respecting women and children employed in clothing and whitework trades. The action of this statute was paralysed by a decision, the effect of which was to prevent the fixing of a graduated scale of wages as is done by the Victorian Boards. The necessity for some protection to the persons intended to be benefited by these statutes was urged in the annual reports of the Chief Inspector of Factories, but, until 1906, without effect. Many employers, however, voluntarily complied with the Boards' determinations, though these were without legal force. The system was brought into full operation by the Act of 1906, which preceded the Victorian Act of 1907, in extending the system to other than factory trades, and was of a wider scope than the Victorian Act.

The system is also in operation in New South Wales and Queensland, and came into operation in Tasmania during 1911. In Western Australia the object is attained under the Arbitration Court system.

It is claimed that the introduction of the Wages Board system affording protection from unfair competition to employers, and the assurance of fair wages to employees, has led to improvement in working conditions, and that the appreciation of the workers is evidenced by the number of applications for the granting of Boards.

(ii.) *Mode of Constitution.* The following statement is taken from the Report of the Chief Inspector of Factories, Victoria, for 1907. It is still applicable in that State, and is interesting, in view of the very general movement throughout Australia towards the constitution of Wages Boards. The method is not precisely the same in the different States, but that of Victoria is given as being the State in which the system was first introduced, and has had most remarkable development:—

"The constitution of a Board, and the appointment of the members of a Board, involve two distinct procedures. Before a Wages Board is constituted, it is necessary that a resolution in favour of such a course should be carried in both Houses of the Legislature. It is usual for the Minister administering the Factories Act to move that such a resolution should be passed. He may be induced to adopt such a course, either by representations made by employers and employees, or by employees alone, or by the reports of the officers of the department. The reasons alleged by employers for desiring a Board are, usually, unfair competition; and those by employees, low wages, and often the employment of excessive juvenile labour. If the Minister is satisfied that a case has been made out, he will move the necessary resolution in Parliament, and when such resolution has been carried, an Order-in-Council is passed constituting the Board. The Order indicates the number of members to sit on the Board. The number of members must not be less than four nor more than ten. The Minister then invites, in the daily press, nominations for the requisite number of representatives of employers and employees.

These representatives must be, or have been, employers or employees, as the case may be, actually engaged in the trade to be affected. All that is necessary is, that the full names and addresses of persons willing to act should be sent in. Where there are associations of employers or employees, it is not often that more than the necessary number of nominations are received. In any case, the Minister selects from the persons whose names are sent in, the necessary number to make up a full Board. The names of persons so nominated by the Minister are published in the *Government Gazette*, and unless within twenty-one days, one-fifth of the employers, or one-fifth of the employees, as the case may be, forward a notice in writing to the Minister that they object to such nominations, the persons so nominated are appointed members of the Board by the Governor-in-Council. If one-fifth of the employers or employees object to the persons nominated by the Minister—and they must object to all the nominations, and not to individuals—an election is held under Regulations made in accordance with the Act. Shortly stated, employers have from one to four votes, according to the size of the factories carried on, as regards the election of employers, but as regards Wages Boards for shops, each employer has only one vote; and each employee in the trade, over eighteen years of age, has a vote for the election of representatives of employees. The Chief Inspector conducts such elections, the voting is by post, the ballot papers being forwarded to each elector. Within a few days of their appointment, the members are invited to meet in a room at the office of the Chief Inspector of Factories, and a person (always a Government officer, and usually an officer of the Chief Inspector's department) is appointed to act as secretary. The members must elect a chairman within fourteen days of the date of their appointment, and if they cannot agree to a chairman, he is appointed by the Governor-in-Council. The times of meeting, the mode of carrying on business, and all procedure, is in future entirely in the hands of the Board. Vacancies in Wages Boards, and, because of the preponderance of Chinese, all appointments of members of the Furniture Board, are filled on the nomination of the Minister without any possibility of either employer or employee objecting. The result of the labours of a Board is called a 'Determination,' and each item of such determination must be carried by a majority of the Board. It will be seen that, unless employers and employees agree, a full attendance of the Board is required, as, in case of a difference of opinion, the chairman decides the matter, and he has only one vote, the same as any other member of the Board. When a determination has been finally made, it must be signed by the chairman, and forwarded to the Minister of Labour. The Board fixes a date on which the determination shall come into force, but this date cannot be within thirty days of its signature by the chairman. If the Minister is satisfied the determination is in form, and can be enforced, it is duly gazetted. In the event of the Minister considering that any determination may cause injury to trade, or injustice in any way whatever, he may suspend same for any period, not exceeding six months, and the Board is then required to consider the determination. If the Board does not make any alteration, and is satisfied that the fears are groundless, the suspension may be removed by notice in the *Gazette*. Provision is made by which either employers or employees may appeal to the Court of Industrial Appeals against any determination of a Board. This Court consists of any one of the judges of the Supreme Court, sitting alone, and the judges arrange which of them shall for the time being constitute the Court. An appeal may be lodged (a) by a majority of the representatives of the employers on the Board; (b) a majority of the representatives of employees on the Board; (c) any employer or group of employers, who employ not less than 25 per cent. of the total number of workers in the trade to be affected; or, (d) 25 per cent. of the workers in any trade. The Court has all the powers of a Wages Board, and may alter or amend the determination in any way it thinks fit. The decision of the Court is final, and cannot be altered by the Board, except with the permission of the Court, but the Court may, at any time, review its own decision. The Minister has power to refer any determination of a Board to the Court for its consideration, if he thinks fit, without appeal by either employer or employee. The decision of the Court is gazetted in the same way as the determination of the Board, and comes into force at any date the Court may fix. The determinations of the



Board and the Court are enforced by the Factories and Shops Department, and severe penalties are provided for breaches of determination. No proceedings for breaches of the determination can be taken by any one without the sanction of the Department. Any employee, however, may sue an employer for any wages due to him under any determination, notwithstanding any contract or agreement expressed or implied to the contrary."

(iii.) *Special Minimum Wage Provisions.* At the end of 1908 the Minimum Wage Act was passed in New South Wales. A summary of the provisions of this enactment, and a statement of some of the ills it was intended to meet, as set out in the departmental reports, will serve as an indication of the general trend of public feeling in regard to employees throughout the Commonwealth. The Act provides for a weekly wage of not less than four shillings to all persons coming within the definition of "workman" or "shop assistant." That such a measure was necessary is evidenced by the fact that in the workrooms in the Sydney district no less than 514 girls, whose ages ranged from 13 to 21 years, were, at the end of 1908, in receipt of less than four shillings per week, and in the Newcastle district there were 272 girls employed in the dressmaking and millinery workrooms receiving less than four shillings a week, the majority being paid no wages at all for their services. The Minimum Wage Act applies to persons coming within the definition of "shop assistant" in terms of the Early Closing Act. A minimum rate of threepence per hour or portion of an hour is to be paid when overtime is worked at intervals of not more than one month, and a sum of not less than sixpence as tea-money is to be paid on the day the overtime is worked. The payment by employees, or on their behalf, in the clothing and wearing apparel trades, of a premium or bonus is prohibited. The system of so-called apprenticeship without payment originally carried with it the recognition of an obligation to teach the trade, especially in the dressmaking and millinery industry. This aspect of the case had, to a very great extent, been forgotten in the large workrooms, the training received for some time being more that of general discipline than of a technical character. With a minimum wage of four shillings, an employer will find it worth while to teach her employees, so as to bring in a return, in work, for the outlay as speedily as possible, and discharges of partially-trained workers will be less frequent. It is expected that the trades will also be improved by the weeding out of those who fail to show reasonable aptitude for their work. It is hoped that the provisions of the Act will result in considerably less overtime being worked by the younger girls, who are the persons chiefly affected by its provisions.

(iv.) *Comparison with Functions of Boards of Conciliation in Britain.* It may be noted that the Boards of Conciliation, appointed in England under the Conciliation Act 1897, appear to correspond to the Australian Wages Boards rather than to the Arbitration Courts of Australia, inasmuch as they are appointed for each trade or calling, and not to adjudicate generally upon cases which come before them.

**3. The Arbitration Court System.—(i.) Acts in Force.** The following is a general account of the main features of the Compulsory Arbitration laws of Australia. A few important divergences between the Acts are noted. The New South Wales Industrial Arbitration Act (No. 17 of 1912) was assented to on the 15th April, 1912.

The Acts in force at the close of the year 1911 were as follows:—

South Australia: The Conciliation Act 1894.

Western Australia: The Industrial Conciliation and Arbitration Acts 1902 and 1909.

Commonwealth: The Commonwealth Conciliation and Arbitration Acts 1904, 1909, 1910 and 1911. The Arbitration (Public Service Act) 1911.

(ii.) *Significance of Acts.* In Victoria in 1891, and in New South Wales in 1892, Acts were passed providing for the appointment of Boards of Conciliation, to which application might be made voluntarily by the contending parties. The awards of the Boards had not any binding force. Boards were applied for on but few occasions, their lack of power to enforce awards rendering them useless for the settlement of disputes.

The first Australian Act whereby one party could be summoned before, and, presumably, made subject as in proceedings of an ordinary court of law to the order of a court, was the South Australian Act of 1894. Its principles have been largely followed in other States, but it proved abortive in operation in its own State, and in many respects is superseded by the Wages Board system already described. Western Australia passed an Act in 1900, repealed and re-enacted with amendments in 1902 and 1909, New South Wales followed in 1901. The Commonwealth principal Act, passed in 1904, applies only to industrial disputes extending beyond the limits of a single State. In Western Australia there is under the Act a Court of Arbitration and three Boards of Conciliation. Each of the latter has a limited jurisdiction over the industrial district assigned to it, but the Boards are practically obsolete, as nearly the whole of the work under the Arbitration Act has devolved upon the Court.

(iii.) *Industrial Unions.* The Arbitration Act, framed to encourage a system of collective bargaining, to facilitate applications to the court, and to assure to the worker such benefits as may be derived from organisation, virtually creates the Industrial Union. This, except in New South Wales, is quite distinct from the trades union; it is not a voluntary association, but rather an organisation necessary for the administration of the law. The New South Wales Act of 1901 required all trade associations to register as "industrial unions," prescribing the separation of industrial and benefit funds, and enforcing strict and proper management, the industrial funds being available in payment of penalties incurred for breaches of the Arbitration Act. Industrial unions (or "organisations," as they are styled in the Commonwealth Act) may be formed by employers or employees. They must be registered, and must file annual returns of membership and funds. Before unions of employers are registered, there must be in their employment a minimum number of employees. In Western Australia the minimum is 50, under the Commonwealth Act, 100. Unions of employees must, in Western Australia, have a membership of 15; by the Commonwealth Act a membership of 100 is required. The union rules must contain provisions for the direction of business, and, in particular, for regulating the method of making applications or agreements authorised by the Acts. In Western Australia rules must be inserted prohibiting the election to the union of men who are not employers or workers in the trade, and the use of union funds for the support of strikes and lockouts; a rule must also be inserted requiring the unions to make use of the Act. The Amending Act of 1909 regulates the binding of apprentices and terms of apprenticeship.

(iv.) *Industrial Agreements.* Employers and employees may settle disputes and conditions of labour by industrial agreements, which are registered and have the force of awards. They are enforceable against the parties and such other organisations and persons as signify their intention to be bound by an agreement.

(v.) *Powers of Court.* Failing agreement, disputes are settled by reference to the court. This consists of a judge of the Supreme Court of the State, or, in the case of the Commonwealth, of the High Court. In the States, he is assisted by two "members," who are chosen by and are appointed to represent the employers and employees respectively. Technical assessors may be called in to sit with and to advise the court. The Commonwealth Court may (and on the application of an original party to the dispute must) appoint two assessors at any stage of the dispute.

Cases are brought before the court either by employers or employees. The consent of a majority of a union voting at a specially summoned meeting is necessary to the institution of a case; the Commonwealth Act requires the certificate of the registrar that it is a proper case for consideration.

The powers of the court are both numerous and varied; it hears and makes awards upon all matters concerning employers and employees. The breadth of its jurisdiction may be gathered from the Commonwealth definition of "industrial matters," viz., "all matters relating to work, pay, wages, reward, hours, privileges, rights, or duties of employers or employees, or the mode, terms, and conditions of employment or non-employ-

ment; and in particular, but without limiting the general scope of this definition, the term includes all matters pertaining to the relations of employers and employees, and the employment, preferential employment, dismissal or non-employment of any particular persons, or of persons of any particular sex or age, or being or not being members of any organisation, association, or body; and any claim arising under an industrial agreement; and all questions of what is fair and right in relation to any industrial matter having regard to the interests of persons immediately concerned, and of society as a whole."

The object of the court is to endeavour to prevent and settle industrial disputes; and when they have occurred to reconcile the parties. The court may fix and enforce penalties for breaches of awards, restrain contraventions of the Acts, and exercise all the usual powers of a court of law. The High Court has declared that the power of the Commonwealth Arbitration Court to make a common rule, *i.e.*, an extension of award in a particular case to cover the whole industry affected by the proceedings, is *ultra vires* of the constitution.<sup>1</sup>

The court may prescribe a minimum rate of wage; it may also (except in Western Australia) as regards employment direct that preference of employment or service shall be given to members of unions. An opportunity is offered for objection to a preference order, and the court must be satisfied that preference is desired by a majority of the persons affected by the award who have interests in common with the applicants.

The Commonwealth Court is to bring about an amicable agreement, if possible to conciliate and not to arbitrate, and such agreement may be made an award. In order to prevent a matter coming into dispute the president of the Commonwealth Arbitration Court may convene a compulsory conference under his own presidency. Attendance of persons summoned to attend is compulsory. Provision is made in the recent Act, whereby, if there is no settlement arrived at in the conference, the president may refer the matter to the court and then arbitrate on it.

There are four ways in which a matter may be brought before the court—

- (a) By the registrar certifying that it is a dispute proper to be dealt with by the court in the public interest.
- (b) By the parties, or one of them, submitting the dispute to the court by plaint in the prescribed manner.
- (c) By a State Industrial Authority, or the Governor-in-Council of a State in which there is no such Authority, requesting the court to adjudicate.
- (d) By the president referring to the court a dispute as to which he has held a conference without an agreement being reached.

All parties represented are bound by the award, and also all parties within the ambit of a common rule or (in the case of Western Australia) giving adherence. The court possesses full powers for enforcement of awards.

In Western Australia there is also a system of Boards of Conciliation, consisting of representatives of employers and employees. These, however, are practically obsolete. They had power to make awards, which were binding if not challenged within a month after being filed, but which were almost invariably appealed from.

States have included their railway and tramway employees, and also the employees of certain other public bodies under the Acts; the section of the Commonwealth Act giving the Commonwealth Court power over State employees has been declared unconstitutional by the High Court.<sup>2</sup>

(vi.) *Repression of Strikes and Lockouts.* The first instance of a strike on a large scale in Australia occurred in 1890 and 1891, when the industrial upheavals assumed far-reaching proportions. As a result of differences between pastoralists and shearers, the labour unions called out the maritime workers. Industry was paralysed by the cessation of the sea-borne coal trade. Communications were held up, and commercial activity suspended. The chief results of the strike were indirect. It was seen that peaceful methods of adjusting disputes were more conducive to the welfare of the

1. *The King v. The Commonwealth Court ex parte Whybrow.* (2 C.L.R., vol. 2, p. 1).

2. *Federated Amalgamated Railway, etc., Employees v. N.S.W. Railway, etc., Employees.* (4 C.L.R. 488).

community generally, than the suicidal methods of strike and lockout. The unions therefore turned to legislation as an effectual means of improving labour conditions. It was hoped that open hostility to the economic system might be prevented by State regulation. A general desire was shewn for recognition of conciliation and arbitration, voluntary where possible; but compulsory, through national tribunals and under legal authority, where necessary.

Accordingly, industrial legislation aims at preventing strikes and lockouts in relation to industrial disputes, other means of settlement being provided. Such is the declared object of the Commonwealth Acts. It is decreed that no person or organisation shall, on account of any industrial dispute, do anything in the nature of a strike or lockout, or continue any strike or lockout, under a penalty of £1000.

Strikes, however, have not altogether ceased, even in those States where legislation, by stringent enactment, forbids them. It has been noted that strikes of late have occurred chiefly amongst coal miners and certain unions representing unskilled laborers. The prohibiting clauses have not always been enforced by the executive. But in several instances indictment has followed attempts to bring about or to prolong a strike, and fines and imprisonment have been awarded. A decision of the Arbitration Court, ordering the Newcastle coal trimmers to return to work, was upset by the Supreme Court of New South Wales, on the ground that the Arbitration Court had no power to make men work if they did not wish to do so.

Neither Wages Boards nor Arbitration Courts have altogether abolished strikes, but it is believed that they have greatly reduced their number and extent, and checked industrial unrest, by providing a properly-constituted legal tribunal for the settlement of matters in dispute.

(vii.) *Miscellaneous.* Protection is afforded to officers and members of unions against dismissal merely on account of such officership or membership, or on account of their being entitled to the benefit of an award.

It has been settled by the High Court that an Arbitration Court cannot direct—

- (a) That non-unionists seeking employment shall, as a condition of obtaining it, agree to join a union within a specified time after engagement;
- (b) That an employer requiring labour shall, *ceteris paribus*, notify the secretary of the employees' union of the labour required.<sup>1</sup>

(viii.) *The New South Wales Act of 1912.* This Act combines, to some extent, the Wages Boards and Arbitration Courts systems. It repeals existing industrial legislation (*Industrial Disputes Acts of 1908 (two), 1909, and 1910, Clerical Workers Act of 1910, &c.*), preserving the awards and industrial agreements already in force under them; and provides for the regulation of industry by conciliation and arbitration, establishing and defining the powers, jurisdiction, and procedure of the Court of Industrial Arbitration and subsidiary tribunals which it creates. Before registration as an industrial union, employers must have at least 50 persons in their employ. Any trade union of employers may be registered. Power to make agreements with an employer relating to industrial matters is given to industrial unions of employees. Industrial boards are constituted, consisting of a chairman and either two or four members, holding office for three years, and appointed by the Minister. These boards have jurisdiction in matters relating to certain industries enumerated in a Schedule to the Act. Both the *personnel* of the members and the matters to be dealt with are recommended to the Minister by the Court. Boards have power to make awards, fix hours of labour, minimum wages, rates for piecework and overtime, proportion of apprentices to improvers, &c. They may determine industrial matters, and declare that preference of employment be given to unionists. The Court may vary the board's recommendations, or make an award in cases where the board has not done so. Lockouts and strikes are forbidden, and where the latter are penalised, unions concerned may be made to contribute. The Act is to commence on a date to be proclaimed.

4. *Comparative Statement of Tribunals for Regulating Wages in Australia and New Zealand.*—The table on pages 1064 and 1065 shews at a glance the Acts which operate in fixing wages, their application, the constitution and function of tribunals enacted under

1. Trolly, etc., *Union of Sydney and Suburbs v. Master Carriers' Association of New South Wales*. (2 C.L.R. 509.)

them, and the effect and extent of the tribunals' decisions. It will be seen that in all the States there is machinery for the regulation of wages; and also in New Zealand.

**5. Movement Towards Uniformity.**—The wide difference between the development in the several States of the Commonwealth of the regulation by State institutions of the remuneration and conditions of the workers, has given rise to a desire on the part of the Commonwealth Government to secure uniformity throughout Australia by any suitable and constitutional action on the part of the Commonwealth. The provisions of States wages laws vary considerably. In New South Wales, Victoria, and Western Australia, some experience has been gained of their working. The Wages Board system is new in South Australia, Queensland, and Tasmania. The desirability of uniformity has, as already mentioned, been recognised by the New South Wales Arbitration Court, which refused the Bootmakers' Union an award which would increase the wages of its members to amounts exceeding those paid in Victoria in the same trade, the express ground of the refusal being that New South Wales manufacturers would be handicapped by the payment of a higher rate of wage than that prevailing in Victoria.

**6. Constitution Alteration Proposals.**—Two proposed laws for the alteration of the constitutional powers of the Commonwealth in regard to industries and businesses were submitted to the people for acceptance or rejection on the 26th April, 1911. The first law proposed to amend section 51 of the Constitution Act (see p. 22 and 23 hereinbefore) so as to give the Commonwealth Government increased powers to deal with (a) trade and commerce (b) corporations (c) industrial matters, and (d) trusts and monopolies. The second law proposed to insert after section 51 of the Constitution Act, a section empowering the Commonwealth Government to make laws with respect to monopolies. Neither of the proposals was approved by the people. Fuller particulars are given on page 22 of this book.

**7. The "New Protection."**—The opinion has been expressed that a manufacturer who benefits by the Commonwealth protective tariff should charge a reasonable price for the goods which he manufactures, and should institute a fair and reasonable rate of wage and conditions of labour for his workmen.

The above view is known as the "New Protection," a phrase which, though novel, is already firmly established in Australian economic discussions. The outcome has been the enactment of new laws, designed for the benefit of the workers, and for controlling monopolies and trusts which would otherwise exploit the necessities of life.

By the Customs Tariff 1906, increased duties were imposed upon certain classes of agricultural machinery, notably the "stripper-harvester," a machine invented in Australia, which has, to a great extent, replaced the "reaper and binder and thrashing machine" in the harvesting of wheat. By the same Act it was enacted that the machines scheduled should not be sold at a higher cash price than was thereby fixed, and that if that price should be exceeded, the Commonwealth Executive should have power, by reducing the customs duties imposed by the Act, to withdraw the tariff protection.

By the Excise Tariff Act 1906 (No. 16 of 1906), an excise of one-half the duty payable upon imported agricultural machinery was imposed upon similar machinery manufactured in Australia. But it was provided that the latter should be exempt from excise if the manufacturer thereof complied with the following condition, namely, that the goods be manufactured under conditions as to the remuneration of labour, which—

- (a) Are declared by resolution of both Houses of the Commonwealth Parliament to be fair and reasonable;
- (b) Are in accordance with the terms of an industrial award under the Commonwealth Conciliation and Arbitration Act 1904;
- (c) Are in accordance with the terms of an industrial agreement filed under the last-mentioned Act;
- (d) Are, on an application made for the purpose to the President of the Court, declared to be fair and reasonable by him or by a judge of a State court or a State industrial authority to whom he may refer the matter.

## TRIBUNALS FOR THE REGULATION OF WAGES IN

PARTICULARS.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
Name of Acts	Industrial Disputes Acts 1908, 1909, and 1910	Factories and Shops Acts	The Wages Board Act 1908
If Act operative	Yes	Yes	Yes
No. of Tribunals	Unlimited	Unlimited	Unlimited
Actual Tribunal	Industrial Boards, and in certain events, Industrial Court	Wages Boards	Wages Boards
How Tribunal is brought into existence	Industrial Boards by the Governor on recommendation of Industrial Court. Industrial Court constituted by Industrial Disputes Act	By a resolution of Parliament	By the Governor-in-Council
Application of Acts	To industries named in Schedule to 1908 Act, and those added by a resolution of both Houses of Parliament	To any process, trade, business, or occupation specified in a resolution.	Either the whole State or such part as Governor-in-Council may determine
How a trade is brought under review	By application to Industrial Boards	Usually by petition to Minister	By petitions and representations to Minister
Chairman of Tribunal	Appointee of Governor on recommendation of Industrial Court. The person recommended is chosen by the parties; or failing such choice is nominated by Industrial Court	Any person elected by Board. If not elected, he is appointed by Governor-in-Council	Any person elected by Board. If none elected, appointment is by the Governor-in-Council
No. of members of Tribunal	Chairman, and not less than two nor more than four members	Not exceeding eleven	Not less than five nor more than eleven (including chairman)
How members are appointed	Appointed by the Governor on recommendation of Industrial Court	Nominated by Minister. But if one-fifth of employers or employees object, representatives are elected by them	By employers and employees respectively
Decisions—how enforced	By the Industrial Court or Industrial Registrar or Stipendiary or Police Magistrate	By Factories Department in Courts of Petty Sessions	By Factories Department
Duration of decision	For period fixed by Tribunal—not less than one nor longer than three years	Until altered by Board	Until altered by Board
Appeal against decision	To Industrial Court against decision of Boards not presided over by a judge. No appeal from Industrial Court	To the Court of Industrial Appeals	None
If suspension of decision possible	No suspension	Yes; for not more than twelve months	Yes; for not more than six months
If unionism an essential part of system.	No	No	No
Any provision against strikes	Yes	No	No
To whom Tribunal's decision applies	To employers and employees	To trades	To trades

## TRADES IN AUSTRALIA AND NEW ZEALAND, 1911.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	NEW ZEALAND.
The Factories Acts 1907, 1908, and 1910	Industrial Conciliation and Arbitration Acts 1902 and 1909	Wages Boards Acts 1910 and 1911	Industrial Conciliation and Arbitration Acts, 1908 (two), 1910 and 1911
Yes	Yes	Yes	Yes
As authorised by resolution of Parliament	Several Conciliation Boards One Arbitration Court	Unlimited	Three Commissioners of Conciliation One Arbitration Court
Wages Boards	Arbitration Court	Wages Boards	Arbitration Court
By the Governor-in-Council	By the Act	For the clothing trade, by the Act; for other trades, by a resolution of Parliament	By the Act
To trades carried on in factories and such other trades and callings as may be authorised by Parliament	All industrial occupations	All trades, or groups or parts thereof	All trades
By petitions, etc.	By application of Union or Employer	By application of parties	By application of Union or individual employer
Anyone if chosen by Board. If not, a Stipendiary Magistrate	A Judge of the Supreme Court	Any person elected by the Board. If none elected, appointment by the Governor-in-Council	A Judge of the Supreme Court
Not less than five nor more than eleven, inclusive of chairman	Three, including president or chairman	Chairman, and not less than four nor more than ten	Three
By employers and employees respectively	Practically by employers and employees respectively	By employers and employees respectively	By the Unions of Employers and workers respectively
By Factories Department	By Arbitration Court on complaint of any party to the award or Registrar	By the Minister in Courts of Petty Sessions.	By Arbitration Court on complaint of Union or Inspector of Awards
Until altered by Board or by order of Court of Industrial Appeals	For period fixed by Court, not exceeding three years	Until altered by Board.	For period fixed by Court, not exceeding three years
To Court of Industrial Appeals	No appeal	To Supreme Court	No appeal
Yes	No suspension. Power to amend for purpose of remedying defects or of giving fuller effect to award	Yes	Yes; in case of strikes
No	Yes	No	Yes
Yes	Yes	Yes	Yes
To trades and callings	To trades	To employers and employees	With certain exceptions to the trades concerned generally

By the Excise Tariff Act 1906 (No. 20 of 1906), excise duties are imposed in respect of spirits, and it is provided that if any distiller (i.) does not, after the Act has been passed a year, pay his employees a fair and reasonable rate of wages per week of forty-eight hours or (ii.) employs more than a due proportion of boys to men engaged in the industry, the Executive may on the advice of Parliament impose an additional duty of one shilling per gallon on spirits distilled by that distiller.

Exemptions have been claimed by the manufacturers of agricultural machinery in South Australia, New South Wales, Victoria, and Tasmania. These were granted in the two first-mentioned States in consequence of an agreement entered into between the employers and employees. In Victoria, "this whole controversial problem with its grave social and economic bearings" (to quote the words of the President of the Court) was discussed in a lengthy case upon the application for exemption by Victorian manufacturers, now widely known as the "Harvester Case," and in the report of that case may be found the legal interpretation of the Acts under consideration. The exemptions claimed were refused, and the court after discussing the meaning of the words "fair and reasonable" defined them by laying down what it considered to be a scale of fair and reasonable wages.

The High Court has pronounced that the legislation under these Excise Acts is unconstitutional as being an extension of Federal action beyond the powers granted, and a usurpation of the ground reserved to the States. It may be noted that the rejected measures were enacted with the consent of all parties in Parliament, having been placed upon the Statute Book whilst the Liberal party was in power, the Labour representatives strongly supporting the proposals.

8. **Bounties.**—The Bounties Act 1907, the Manufactures Encouragement Act 1908, and the Shale Oil Bounties Act 1910 make provision for the encouragement of certain Australian industries by the payment to producers of certain moneys allotted by the Act upon the production of the commodities specified. The Acts also provide for the refusal or reduction of a bounty, if the production of a commodity is not accompanied by the payment to the workers employed in that production of a fair and reasonable rate of wage. The amounts paid in bounties during 1910-11 were :—

**COMMONWEALTH BOUNTIES PAID (EXCLUDING SUGAR), 1910-11.**

Cotton.	Flax and Hemp.	Sisal Hemp.	Preserved Fish.	Tobacco Leaf.	Cotton Seed for Manufacture of Oil.	Coffee, Raw.	Fruits, Dried.	Combed Wool or Tops Exported.	Iron Manufactures etc.*	Wire Netting.*	Kerosene.†	Refined Paraffin Wax.†	Total.
£ 91	£ 123	£ 112	£ 115	£ 90	£ 22	£ 112	£ 940	£ 8,522	£ 24,603	£ 4,824	£ 920	£ 553	£ 41,027

\* Paid under the Manufactures Encouragement Act 1908.

† Paid under the Shale Oil Bounties Act 1910.

The provision of bounties for sugar-growers is dealt with on page 393 *supra*. The present operative Act is the Sugar Bounty Act 1910, in the terms of which the grower receives bounty according to his production of sugar-cane grown by white labour. The bounties and expenses for the last seven years were :—

**SUGAR BOUNTIES EXPENSES, 1904-5 to 1910-11.**

Year.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
Bounties ...	£ 121,408	£ 148,106	£ 328,210	£ 577,148	£ 477,090	£ 402,131	£ 630,610
Expenses ...	6,770	6,603	7,706	7,474	6,616	5,648	6,862
Total ...	128,178	154,709	335,916	584,622	483,706	407,779	637,472



## § 4. Operation of the Wage-regulating Laws.

**1. Wages Boards Determinations.**—Wages Boards are appointed upon the application of either employers or employees. The grounds usually alleged by the former are that their business is hampered by "unfair" competitors, who pay only a sweating wage; by the latter, that they are sweated, or are entitled to an increase in their wages, by reason of the prosperity of the trade in which they are engaged. Some of the most recently appointed Boards have not yet made determinations.

In New South Wales there were in November, 1910, 117 Boards in existence. Awards of Boards and of the Industrial Court numbered 195, of which 54 were variations of previous awards, 20 were awards of Boards re-enacting awards of Court of Arbitration, 18 were awards of Industrial Court varying awards, and the remaining 103 were original Awards of Boards. Before the end of the year, two additional awards of Boards were made. In August, 1911, there were 159 boards in existence.

In Victoria there were in June, 1911, 91 Wages Boards affecting 110,000 employees. 71 determinations of Boards were in force. Since the date named the remaining Boards have met for the purpose of fixing wages, hours, etc.

The Court of Appeal in Victoria has heard seven appeals from determinations of Wages Boards. In one case the decision was upheld; in five cases decisions were reversed or amended; in one case the Board, unable to come to a determination, referred the matter to the Court, which exercised its power of fixing a proper wage where the average wage paid by employers did not afford a living wage. The Court also heard an appeal for a modification of its determination with respect to a trade, and decided to modify such determination by reducing the working hours and increasing the wages in certain cases.

The number of Wages Boards appointed in Queensland since the Acts came into force was, in October, 1911, 59. The employees affected numbered upwards of 30,000. In 57 cases determinations were in force. In South Australia there were, at the end of 1910, 44 trades under boards, with about 20,000 employees. Twenty-three determinations were in force. The Wages Board system was inaugurated in Tasmania in 1911. Up to 30th June of that year no determination was in force.

It is stated that the determinations are well observed, and prosecutions for breaches are few, misunderstandings being usually responsible. Where there is no evident intention to evade the determination, rectification can be made on the inspector calling attention to the breach, and the employers usually comply at once with the inspector's requirements. Further action is then deemed unnecessary.

**2. Effect of Acts.**—The question whether the operation of the Acts has bettered the monetary position of the operative may be answered in the affirmative. Starting from the lowest point, the provision of an absolute minimum wage per week has stopped one form of gross sweating. Another case is that of the "white-workers" and dressmakers; with these the lowest grade was the "outworkers," who were pieceworkers. In some branches of the Victorian trade, in 1897, the wages paid to outworkers for all classes of certain goods were only from one-third to one-half the wages paid in the factories for low-class production of the same line of stuff. By working very long hours the outworker could earn ten shillings per week. The average wage of females in the clothing trade in 1897 was ten shillings and tenpence per week; there were, however, in that year 4164 females receiving less than one pound per week, and their average was eight shillings and eightpence. It was almost a revolution when a minimum wage of sixteen shillings per week of forty-eight hours was fixed by the Board, when pieceworkers' rates were fixed to ensure a similar minimum, and when outworkers were placed on the level of pieceworkers. Many employers refused to continue to give outwork and took the workers into the factories on time work. The sanitary conditions

required were far more healthy than could exist in the poorer class of dwellings. The evidence of South Australian reports discloses similar facts in that State.

**3. Change of Rate of Wage.**—The following table shews the change of affairs in Victoria in these trades:—

**VICTORIA—WAGES OF FEMALES IN CLOTHING TRADES, 1897 and 1910.**

Year.	Class.	Females Employed in the Dress, Mantle, and Under-clothing Trade.		Females Employed in the Shirt Trade.			
		Number.	Average Wage.	Number.	Average Wage.		
1897	16 yrs. and over receiving under £1 per wk.	4,164	£ s. d. 0 8 8	435	£ s. d. 0 12 3		
	"    "    £1 and over ...	593	1 9 1	144	1 3 10		
1910	Females Employed in ...	Dress and Mantle Trade.		Shirt Trade.		Underclothing Trade	
		Number.	Average Wage.	Number.	Average Wage.	Number.	Average Wage.
	Females at minimum wage and over ...		s. d.		s. d.		s. d.
	Pieceworkers ...						
		3,674	21 9	271	22 7	736	21 1
		93	19 4	865	19 8	176	19 1

The above trades, the sweating in which is world-wide, are taken as examples, and corresponding results may be obtained in any State, according as there is or is not a regulative law. In Tasmania, where no such law was in operation till 1911, the scale of wages may be gathered from the fact that in clothing factories females of three and five years' service, and of twenty to twenty-six years of age, received twelve shillings per week.

## § 5. Operation of the Arbitration Acts.

**1. New South Wales and Western Australia.**—In New South Wales eighty-six agreements were registered under the Industrial Arbitration Act 1901, and two under the Industrial Disputes Act 1908. These affected 1157 employers and nearly 38,000 employees. In Western Australia thirty-four agreements were registered up to the end of 1906; ten in 1907, six in 1908, fifteen in 1909 and twelve in 1910, making a total of seventy-seven. The courts have been kept extremely busy. In New South Wales, up to the end of 1908, 252 industrial disputes were filed, 130 awards were made, and the balance of the disputes were settled, withdrawn, or, for some other reason, removed from the list. Fifteen industrial agreements were made "common rules," but these are ineffective in consequence of a legal decision. Fifty-five awards have been made "common rules." There have also been 648 summonses for breaches of awards. In Western Australia 300 industrial cases were, up to the end of 1910, determined; and seventy-seven industrial agreements were made and filed. The Industrial Disputes Act of New South Wales proved far more speedy in its remedial effects than did the Arbitration Acts. During recent years the industrial relations in several important industries have been regulated by Industrial Agreements, thus avoiding the necessity of having recourse to the Court of Arbitration.

## § 6. Other Commonwealth Legislation affecting Labour.

**1. Constitutional Power.**—By sec. 51 of the Commonwealth of Australia Constitution Act power is conferred upon the Parliament of the Commonwealth to make laws respecting, *inter alia*—

- (xix.) Naturalisation and aliens.
- (xxiii.) Invalid and old-age pensions.
- (xxvii.) Immigration and emigration.
- (xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State.

2. **Legislation.**—(i.) *Old-age Pensions Act.* A special appropriation was made by Parliament (Act No. 18 of 1908), whereby an Invalid and Old-age Pensions Fund was created; the payment of pensions was enacted by another statute (No. 17 of 1908) as from the 1st July, 1909, on which date the system of old-age pensions to persons of 65 years and upwards became established throughout the Commonwealth. The same Act provides for the payment of invalid pensions, operating from a date to be proclaimed; also for the age qualification for women being fixed at 60 by proclamation. In each case the proclamations were made in November, 1910.

(ii.) One of the first Acts of the Commonwealth was the *Pacific Island Labourers' Act 1901*, which prohibited the importation of further Kanaka labour for sugar plantations and provided for the deportation of those already in the Commonwealth.

(iii.) *The Immigration Restriction Acts 1901, 1905, and 1910* prohibit the immigration of any persons who are unable to comply with certain educational conditions. The effect of this Act is to exclude Asiatic and other coloured peoples from Australia.

(iv.) *The Contract Immigrants Act 1905* defines a contract immigrant as an immigrant to Australia under a contract or agreement to perform manual labour in Australia. The contract must be in writing and must be made by or on behalf of a resident in Australia. Its terms must be approved by the Minister of External Affairs before the admission of the immigrant. It must not be made in contemplation of, or with a view of affecting an industrial dispute. The Minister must be satisfied that there exists a difficulty of obtaining a worker of equal skill and ability in the Commonwealth, but this last provision does not apply to contract immigrants who are British subjects either born in the United Kingdom or descended from persons there born. The terms of the contract must offer to the immigrant advantages equal to those of local workers. Domestic servants and personal attendants accompanying their employers to Australia are excluded from the operation of the Act. Contract immigrants not complying with the above conditions are excluded from Australia.

During the year 1907, 972 contract immigrants were admitted into the Commonwealth, of whom 731 were British, 107 were Spaniards, 80 Scandinavians, 41 Austrians, and 13 Germans. In 1908, 22 contract immigrants were admitted, of whom 20 were British and 2 German. The Britishers followed various occupations; the two Germans were piano makers. In 1909, 158 contract immigrants were admitted, of whom 152 were British. Their occupations were—47 agricultural labourers, 36 bottle makers, 37 station hands, and 32 various. In 1910, 39 contract immigrants were admitted, of whom 38 were British and one French. The occupations were various, the greatest number in any one being eight puddlers (iron trade). No contracts were disapproved, and no contract immigrants were refused admission during 1907, 1908, 1909, or 1910.

(v.) *The Sugar Bounty Act 1910* and the *Bounties Act 1907* make the payment of the bounty contingent on the goods having been grown or produced by white labour.

(vi.) Part VII. of the *Trade Marks Act 1905*, providing for the registration of marks by any individual Australian worker or association of Australian workers for the purpose of informing the consumer whether the articles to which it is applied were manufactured by union or free labour—an adaptation of the American "union label"—has been held by the High Court to be constitutionally *ultra vires*.<sup>1</sup> The Court made an order forbidding the Registrar to keep a workers' register.

1. Attorney-General of New South Wales v. Brewery Employees Union (6 C.L.R. 469).

## SECTION XXVIII.

## DEFENCE.

## § 1. Military Defence.

1. **Historical Outline.**—Prior to 1870, the main defence of Australia was entrusted to small garrisons of British troops quartered in the leading cities. The primary purpose of these bodies of troops was to serve as a convict guard. From time to time, rumours of wars and of attacks upon Australia deemed imminent as a result of European entanglements, caused the raising of local companies and batteries, which were generally disbanded upon the cessation of hostilities or the quietening of the rumours. The first of such bodies was the "Loyal Association" formed in 1801 as a volunteer corps, on account of the Napoleonic wars, and at the express invitation of the Governor. Half a century later, and at other later dates, fear of Russian aggression drove the colonists to measures of self-defence. Efforts to permanently establish a defence force, however, failed until 1870. In that year, the withdrawal of the last Imperial regiment from Australia, and the sense of insecurity which the Continental wars had engendered, resulted in a definite basis for colonial defence being settled. Small detachments of permanent soldiery were established to act generally as a nucleus about which the citizen soldiery should be shaped, and, generally, to look after the forts and defence works, which had then begun to be erected. The system rested upon a volunteer basis, training and service being freely and enthusiastically given by the citizens, the Governments supplying arms and accoutrements and sometimes uniforms. Reward for five years' service frequently took the shape of grants of land. About 1880, Imperial experts advised the substitution of the purely volunteer system by a "militia" or partially-paid system. The provision of a small annual allowance, generally £10 or £12 per annum for the gunner or private, with a sliding scale for higher ranks, together with arms, accoutrements, ammunition, and all military necessities free, enabled the "militia" system to be introduced about 1883-4. The expenditure was thereby increased, but it was held that the efficiency was enormously greater. With reductions in the rates of pay the system has remained to the present day. "Volunteer" corps have again been raised, and the "permanent" forces from time to time augmented. A detailed historical account of the Australian defence forces prior to federation will be found in the Commonwealth Year Book, No. 2, pp. 1075-1080.

The establishment and strength of the military forces of the several States on 31st December, 1900, immediately prior to federation, was as follows, cadets, reservists, and rifle club members being excluded:—

## ESTABLISHMENT AND STRENGTH OF MILITARY FORCES OF STATES,

31st December, 1900.

State.	Establishment.		Strength.	
	Officers.	Other Ranks.	Officers.	Other Ranks.
New South Wales ... ..	549	9,295	505	8,893
Victoria ... ..	394	6,050	301	6,034
Queensland ... ..	310	5,035	291	3,737
South Australia ... ..	141	2,847	135	2,797
Western Australia ... ..	140	2,553	135	2,561
Tasmania ... ..	131	2,605	113	1,911
Commonwealth ... ..	1,665	28,385	1,480	25,873

The strength of the various arms is shewn in the following table, permanent being distinguished from "militia," or partially-paid, and "volunteers" :—

## STRENGTH OF THE VARIOUS ARMS, 31st DECEMBER, 1900.

Arms.	N.S.W.		Victoria.		Q'land.		S. Aust.		W. Aust.		Tas.		TOTAL.	
	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.
Permanent—														
Staff ... ..	19	98	14	58	15	57	14	5	2	8	3	9	67	235
Field and Garrison Artillery ... ..	18	429	12	272	7	214	1	23	2	31	—	15	40	984
Engineers and other units ... ..	5	70	1	32	—	—	—	—	2	2	—	—	8	104
Militia and Volunteer Cavalry and Mounted Rifles ... ..	88	1,695	52	1,033	53	741	33	621	32	799	5	91	263	4,980
Field Artillery ... ..	10	121	14	277	13	138	4	101	12	174	—	—	53	811
Garrison Artillery ... ..	27	441	37	901	17	212	9	165	2	66	13	197	105	1,982
Infantry ... ..	242	5,382	136	3,193	145	2,189	58	1,786	71	1,451	83	1,549	735	15,550
Engineers and other units ... ..	96	597	35	268	41	186	16	96	12	30	9	50	209	1,227
	505	8,833	301	6,034	291	3,737	135	2,797	135	2,561	113	1,911	1,480	25,873

2. *Land Defence of Federated Australia.*—(i.) *Assumption of Control by Commonwealth.* The Commonwealth of Australia Constitution Act of 1900 empowered the Commonwealth to legislate with respect to "the naval and military defence of the Commonwealth and of the Several States, and the control of the forces to execute and "maintain the laws of the Commonwealth," and vested the command-in-chief of the Commonwealth forces in the Governor-General, authorising him to proclaim a date, after the establishment of the Commonwealth, for the transfer of the Defence Department from each State. This transfer was effected in March, 1901, when the Ministry for Defence, one of the seven departments of the Executive Council of the federation, took over the control of the whole of the forces of the States.

(ii.) *The System of Administration.* Up to 12th January, 1905, the administration of the Commonwealth military forces was by means of a general officer commanding and a headquarters staff. On the date named, a Council of Defence, to deal with questions of policy, and a Military Board, to supervise the administration of the forces, were constituted. Towards the close of the year 1911 the Council of Defence was enlarged by the addition of two members. The main objects aimed at were (a) to establish continuity in defence policy; (b) to maintain a continuous connection between parliamentary responsibility and the control and development of the defence forces, the Minister being in constant and effective touch with his department; (c) to establish continuity of administrative methods by the creation of a continuous board; (d) the separation of administration from executive command, so as to develop the independence of district commands, and by giving scope to independent thought and initiative, make practicable a larger measure of decentralisation, and, more particularly, to make possible the ultimate development of a citizen force; (e) to maintain, on a uniform basis, the efficiency of the forces, by continuous and searching inspection by, and independent report from, an officer who, as Inspector-General, is appointed to report upon the results of the administration of the forces, the efficiency of the troops, the system of training, the equipment, the preparedness for war, and the state and condition of all defence works.

The military system of the Commonwealth is made up of—

(a) Permanent Forces which include

Administrative and Instructional Staff.  
The Royal Australian Garrison Artillery Regiment.  
The Royal Australian Field Artillery.

Small detachments of—

Royal Australian Engineers.  
Australian Army Medical Corps.  
Australian Army Service Corps.  
Australian Army Veterinary Corps.

(b) Citizen Forces, comprising

Citizen Forces of all arms.  
Reserve Forces.

The Royal Australian Garrison Artillery Regiment practically provides the garrison for certain naval strategic positions and other defended ports, and maintains the forts, guns, stores, and equipment in connection therewith. The other permanent detachments are to form a nucleus, each in its own arm, for instruction and administration of the citizen forces.

The forces of the Commonwealth are organised into—

- (a) Field Force.
- (b) Garrison Troops.

The field force consists of five Light Horse brigades, two infantry brigades, and four mixed brigades, and its duties are to undertake the defence of the Commonwealth as a whole, and to act as reserve to the garrison troops. The garrison troops find the necessary garrisons for the defended ports.

The reserves consist of (a) officers who, having passed through a certain period or course of training, have retired from active service, and (b) members of rifle clubs, attested under the Defence Acts. Rifle club members are required each year to fire a prescribed musketry course, a capitation allowance being paid to clubs for each member classed as efficient. Rifle clubs would furnish a means of bringing the active forces up to war strength in time of national emergency.

(iii.) *Strength of Military Forces under the Federation.* The position of the military forces under the Commonwealth is shewn in the following table :—

## STRENGTH OF MILITARY FORCES, 1901 to 1911.

State.	1901. *1/3/01.	1905. 30/6/05.	1906. 30/6/06.	1907. 30/6/07.	1908. 30/6/08.	1909. 30/6/09.	1910. 30/6/10.	1911. 30/6/11.
Headquarters ...	...	23	21	21	26	30	37	† 141
New South Wales ...	9,772	7,450	7,641	7,501	7,665	7,902	7,899	8,206
Victoria ...	7,011	5,858	6,146	6,235	6,568	6,669	6,876	6,905
Queensland ...	4,310	2,877	3,011	2,979	3,176	3,224	3,202	3,371
South Australia ...	2,956	1,842	1,962	1,888	1,935	2,004	2,019	1,990
Western Australia ...	2,283	1,235	1,522	1,625	1,611	1,662	1,608	1,600
Tasmania ...	2,554	1,214	1,645	1,662	1,650	1,870	1,868	1,986
Total ...	28,886	20,499	21,948	21,911	22,631	23,361	23,509	24,199

\* Date of Commonwealth taking over the military forces from States. † Includes 83 at Royal Military College of Australia, Duntroon.

(iv.) *Strength of the Various Arms.* The numbers of the different arms of the service on the 30th June, 1911, were as follows:—

## ARMS OF THE COMMONWEALTH DEFENCE, 1911.

Militia Staff ...	47	Army Service Corps	446	Area Officers ...	224
Light Horse ...	5,778	Army Medical Corps	840	Administrative and	
Field Artillery ...	1,461	Automobile Corps...	34	Instructional Staff	575
Garrison Artillery ...	1,899	Army Nurs'g Service	103	Pay Department,	
Engineers ...	1,106	Army Vet'ny. Corps	18	Rifle Ranges, Rifle	
Infantry ...	11,022	Ordnance Departm't		Clubs, Officers, etc.	65
Intelligence Corps	63	(including Arma-		Royal Military C'lege	83
Corps of Signallers	264	ment Artificers) ...	171		
				Grand Total ...	24,199

(v.) *Classification of Land Forces.* The following table shews the classification and strength of the land forces in each State, including rifle clubs and cadets, on the 30th June, 1911:—

## CLASSIFICATION OF LAND FORCES, 1911.

Branch of Service.	Central Adm'n.	New South Wales.	Victoria.	Q'land.	South Aust.	West'n Aust.	Tas.	Total.
Permanently employed ...	135*	670	586	265	108	128	111	2,003
Militia ...	6	7,422	6,216	3,062	1,836	1,440	1,853	21,835
Volunteers ...	—	39	38	16	22	12	10	137
Area Officers ...	—	75	65	28	24	20	12	224
Rifle Clubs ...	—	15,500	19,488	7,692	5,097	5,737	1,886	55,400
Cadets ...	—	11,066	4,447	5,129	2,886	2,847	1,648	28,023
Unattached List of Officers	—	73	97	46	35	27	18	296
Reserve of Officers ...	—	213	255	186	49	43	51	797
Chaplains ...	—	39	45	25	11	18	11	149
Grand total ...	141	35,097	31,237	16,449	10,068	10,272	5,600	108,864

\* Includes 83 at Royal Military College of Australia, Duntroon.

3. *Instruction and Exchange of Officers.*—The former practice of obtaining officers and non-commissioned officers of the Imperial Army to act as instructors for the Australian military forces has been discontinued for some considerable time; but in August, 1905, arrangements were made for the mutual exchange of permanent officers between the Com-

monwealth and England, India, and Canada, three officers having been exchanged each year since 1906. At the same time the practice which has existed for some years of sending officers and non-commissioned officers to England for instruction has been continued. In 1911, two officers and four non-commissioned officers of the permanent forces were sent. In addition, four officers of the militia forces were sent to India for instruction in 1908, four in 1909, five in 1910, and five in 1911.

## § 2. Naval Defence.

1. **Historical Outline.**—Prior to 1890, when arrangements were made with the British Government for the maintenance of an Australian squadron, provisions for naval defence had been instituted in New South Wales, Victoria, Queensland, and South Australia, where gunboats, torpedo boats, or small cruisers were commissioned, and naval volunteers raised. A fuller historical account of the Australian naval forces under the States is given in the Commonwealth Year Book, No. 2, pp. 1084, 1085.

2. **The Naval Agreement with the British Government.**—(i.) *The Original Compact.* The naval defence of Australasia and its trade is entrusted primarily to ships of the Imperial Navy, maintained under an agreement entered into between the British Government and the Governments of the Commonwealth and New Zealand, and at their joint charge. This agreement was embodied in Acts passed by the several Legislatures some ten years prior to Australian federation. According to its terms, a naval force, additional to the vessels of the Australian Naval Station, which were to be maintained at their normal strength, was to act as an auxiliary squadron. It consisted of five fast third-class cruisers and two torpedo gunboats, and its special function was the protection of the floating trade in Australasian waters. The agreement was made for ten years, and was then, or at the end of any subsequent year, to be terminable only upon two years' notice being given. On its termination, the vessels were to remain the property of the Imperial Government. Three cruisers and one gunboat were to be kept continuously in commission, and the remainder in reserve in Australasian ports, but ready for commission whenever occasion might arise. The vessels were to remain within the limits of the Australasian station, and were to be employed, in times of peace or war, within such limits, in the same way as the Sovereign's ships of war, or employed beyond those limits only with the consent of the Colonial Governments.<sup>1</sup> The first cost of the vessels was paid out of Imperial funds, but the Colonial Governments paid interest on the prime cost at 5 per cent. (up to a maximum of £35,000 per annum), and a sum not exceeding £91,000 for annual maintenance of the vessels, or a total annual contribution of £126,000. In times of emergency or actual war, the cost of commissioning and maintaining the three vessels kept in reserve during peace, was to be borne by the Imperial Government, and, in every respect, the vessels were on the same status as the ships of war of the Sovereign, whether in commission or not. The officers and men of those in commission were subject to a triennial change. The tenth annual contribution, which was payable in advance on 1st March, 1900, apportioned on a population basis, was as follows:—New South Wales, £37,973; Victoria, £32,749; New Zealand, £21,304; Queensland, £13,585; South Australia, £10,439; Western Australia, £4816; Tasmania, £4776.

(ii.) *The Agreement of 1903.* The agreement was not dissolved by the union of six of the contracting colonies, but its renewal, with some alterations, was embodied in the Naval Agreement Act of 1903, the Parliament of New Zealand also assenting. It

1. The boundaries of the Australasian station were thus defined:—North—On the north from the meridian of 95° east, by the parallel of the 10th degree of south latitude to 130° east longitude; thence northward on that meridian to the parallel of 2° north latitude; and thence on that parallel to the meridian of 136° east longitude; thence north to 12° north latitude and along that parallel to 160° west longitude. West—On the west by the meridian of 95° east longitude. South—On the south by the Antarctic circle. East—On the east by the meridian of 160° of west longitude.

Nothing in the agreement was to affect the purely local naval forces which had been, or might be, established in the colonies for harbour and coast defence. Such local forces were to continue to be paid for entirely by the colony, and to be solely under its control.

Under the new naval agreement, the boundaries of the Australian station will be considerably altered.



provided that the force should be made up of one first-class armoured cruiser, two second-class cruisers, four third-class cruisers, four sloops, and a Royal Naval Reserve of 25 officers and 700 seamen and stokers. One of the ships was to be kept in reserve, three to be partly manned for drill purposes for training the Royal Naval Reserve, and the remainder to be kept in commission and fully manned. Australians were, as far as possible, to man the three drill ships and one other vessel, but the vessels were to be officered by Royal Navy and R.N. Reserve officers. Eight nominations for cadet-ships were to be given annually in the Commonwealth and two in New Zealand. One half of the annual cost of maintenance was to be borne by the colonies—five-sixths of the half (but not exceeding £200,000) by Australia, and one-sixth (but not exceeding £40,000) by New Zealand. The agreement, like the earlier one, was for ten years. By a subsequent arrangement the strength of the squadron was established at one first-class armoured cruiser, three second-class cruisers, and five third-class cruisers. Three sloops were recalled as having no war value, but usually one has been attached to the station as a survey vessel.

**3. The Naval Defence of Federated Australia.**—(i.) *Assumption of Control by Commonwealth.* One of the reasons most frequently urged in favour of a federated Australia was the need for adequate defence. Accordingly, since the consummation of federation, the Commonwealth has assumed control of every branch of defence. Land defences have been unified and systematised, and it has been said that Australia is now ready to take full responsibility for the defence of her ports and dockyards, and for safeguarding her coastal trade. It may be mentioned that the floating trade of the Commonwealth amounts to nearly £200,000,000 per annum, and its adequate protection involves corresponding naval provision with such naval war material as will permit the principal lines of sea communication being kept open; or, if not, ensuring that Australian ports are fully defended.

For defence of floating trade the Commonwealth Government decided to build an Australian fleet, and in March, 1909, contracted for the construction of two torpedo boat destroyers, at a cost of £81,500 each. The vessels arrived in Australian waters in December, 1910. It was also arranged that a third vessel of the same kind should be delivered in Australia in sections, at a cost of £72,500, for local completion.

In connection with the construction of these vessels, eight selected Australian workmen were sent to be trained in the yards of the contractors.

(ii.) *The Naval Forces under the Federation.* Prior to 1905 a naval officer commanding administered the naval forces. On 12th January of that year the Council of Defence was established to deal with all questions of policy, and the Naval Board, then first constituted, took over the administration of the Commonwealth naval forces. The former body was augmented in 1911. Continuity of policy and administration are thereby believed to be ensured, whilst efficiency and uniformity are provided for in the scheme of inspection and report by an officer who, as Director of Naval Forces, is appointed to deal with the training of the *personnel*, and the condition of the *matériel*, of naval forces and works.

The following table shews the strength of Commonwealth naval forces on 30th June, 1911:—

**STRENGTH OF COMMONWEALTH NAVAL FORCES, 1911.**

Branch of Service.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	Total.
Permanently Employed	10	196	66	97	1	...	370
Naval Militia ...	321	226	284	112	25	25	993
Naval Volunteer Cadets	150	270	101	227	...	...	748
Total ...	481	692	451	436	26	25	2,111

(iii.) *Harbour Defences.* The vessels for harbour defence obtained by the several colonies prior to federation, and remaining at 30th June, 1911, were as follows:—*Protector* (steel cruiser); *Gayundah* and *Paluma* (steel gun vessels); *Childers* and *Countess of Hopetoun* (first-class torpedo boats). The *Protector* and *Gayundah* are used for the sea-training of the Naval Militia.

### § 3. Growth of the Cadet System.

1. **School Cadets.**—Many years before the consummation of Australian federation the systematic military training of lads had been instituted in the schools of the colonies, and the cadet system had attained considerable development. The Commonwealth Government made arrangements with the various State Departments of Education for boys attending school to be afforded facilities for drill by their teachers, and regular instruction by the Cadet Instructional Staff of the military forces. The strength of the cadets increased rapidly under the Commonwealth defence system, and under the recently-introduced scheme (see § 6 *infra*) has shewn great expansion. The voluntary system came to an end on 30th June, 1911. On the following day the compulsory training provisions of the Defence Acts came into force.

2. **Senior Cadets.**—Senior cadet battalions, for boys having left school, formed a connecting link between the schoolboy soldiers and the citizen forces.

3. **Mounted Cadets.**—Mounted cadet corps were also formed in various parts of the Commonwealth, the members supplying their own uniforms, mounts, and horse-gear, and being trained in troop and squadron drill by instructors appointed for that purpose. Their organisation is distinct from the educational establishments, but they are under similar conditions as regards drill and discipline.

The strength of the Commonwealth cadets, school, senior, and mounted, in the various States was on 30th June, 1911, as follows:—New South Wales, 11,066; Victoria, 4447; Queensland, 5129; South Australia, 2886; Western Australia, 2847; Tasmania, 1648; Commonwealth, 28,023.

4. **Naval Cadets.**—Naval cadets were also organised under the Defence Act. Generally the instruction, given by instructors of the naval forces, aimed at embracing all branches of a seaman's training.

5. **Other Organisations.**—Boys' Brigades, Scouts, and "Aids" have been instituted in connection with various societies. These are not under Governmental control, and receive no State aid. Instruction is given in physical, elementary military drill, knotting and splicing, signalling, first aid to the injured, observation and tracking, field sketching, map reading, bridge building, cooking, hygiene, &c. Members of these associations must undergo the training laid down by the Defence Act.

### § 4. Commonwealth Defence Legislation.

1. **The Defence Acts of 1903 and 1904.**—(i.) *General Provisions of the Acts.* The defence of Australia at the present time is enacted and prescribed by the Defence Acts 1903-11 of the Federal Parliament. The provisions of the Acts of 1903 and 1904 and the regulations under them are still the main working principles of Australian defence, the necessary expansion being provided for in the amendments of 1909, 1910, and 1911, which also enacted the system of compulsory training. By the Acts of 1903 and 1904 the Governor-General was empowered to arrange for the efficient defence

of the Commonwealth, and to appoint officers to responsible positions and to commissioned ranks. The defence force was declared to consist of the naval and military forces of the Commonwealth, divided into "permanent" and "citizen" forces. The former consisted of persons bound to continuous service for a term; the latter of persons not so bound. Prior to 1911, they were divided into "militia," who were paid, and "volunteers," who were not ordinarily paid, for their services. Members of rifle clubs, duly sworn, and enrolled persons who had done active service, made up the reserve forces. Until the inauguration of compulsory training on 1st July, 1911, enlistment in time of peace was voluntary. In time of war, the citizen forces might be called out by the Governor-General, who was to state his reason for so doing, and communicate the fact to Parliament. Members of the naval forces might be called upon to serve outside the Commonwealth, but those of the military forces were not liable for such service. The forces might be used for the protection of the States from domestic violence. Command in time of war might be given to the Commander of any portion of the King's regular forces, or of the King's naval forces. For training, and in war, the naval forces might be placed on board ships of the navy of the Australian station. The Army Act (Imperial) was to apply to the Commonwealth military forces, and the Naval Discipline Act (Imperial) to the Commonwealth naval forces, while on active service, except where those Acts were inconsistent with the Commonwealth Defence Acts. Regulations, however, might prescribe that any provisions of the Imperial Acts named should not apply. Provision was to be made out of the Consolidated Revenue Fund for families of men killed or incapacitated while on service.

Male inhabitants between 18 and 60 years of age were liable to serve in time of war, Parliament being informed of the occasion if in session, and being summoned within ten days if not. Under the Acts of 1903 and 1904 persons the doctrines of whose religion forbade them to bear arms or perform military service might be exempted.

Naval and military cadet corps were also established—to consist of schoolboys over 12 years of age, and youths between 14 and 19 not attending school. They were not liable for active service.

The construction and maintenance of vessels, building and equipment of forts, laying of mines, institution of arms and ammunition factories, the acquisition of artillery and rifle ranges, and the performance of all acts for efficient defence and protection, were provided for. In time of war, the control of railways and tramways might be assumed by an officer duly authorised, and vehicles and boats might be impressed, and troops billeted and quartered. Heavy penalties were decreed for unlawfully giving information as to defences, or unlawfully obtaining same; and for supplying inferior provisions, material, equipment, etc. Information required under the Act was to be correctly given. Persons required to enlist were to do so, and were to take the oath of affirmation prescribed, and no person was to procure or aid desertion or to harbour deserters. Obstructing drill, personating, sketching fortifications and works or trespassing in them, or even being, with the intention of graphic representation, in their vicinity with drawing or photographing materials, etc., was forbidden.

An exhaustive body of regulations was drawn up under the authority of these Acts, and the details of service and duties of members of the forces were set out therein. These, having been notified in the *Government Gazette*, had the force of law.

The Governor-General, under the powers conferred upon him by the Acts, appointed an Inspector-General of the Military Forces, a Director of the Naval Forces, District Commandants, and commissioned officers generally. In the first appointment of officers, preference was to be accorded to persons who had served in the ranks. Promotions of officers were generally subject to passing the prescribed examinations, but distinguished service, or marked ability and gallantry in active service, might be permitted to gain promotion without examination. A Council of Defence, and Boards

of Military and Naval Administration were constituted. A Reserve of Officers was formed, and also an Unattached List, whence officers might be employed for duty with any corps or with the staff. The authority of the Act to establish a Naval and Military College was availed of, and a Chair of Military Science was endowed by the University of Sydney, an officer of the Imperial general staff being appointed Director of Military Science. Reference is made hereinafter to the course of instruction. It is hoped that now not only soldiers will be enabled to perfect themselves in the duties of their profession, but that the influence of the teaching will pervade all classes of the community, and enable Australian citizens to speak and vote more effectively, because with greater knowledge, when defence matters come up for consideration.

(ii.) *Regulations for Efficiency.* Under the regulations certain requirements for efficiency were set out for members of the militia forces, inefficient being discharged. The principal of these requirements were:—Attendance at the annual camps of training; completion of a course of “field training” in the special duties of the arm to which the member is attached; attendance at District Commandants’ inspections; and the performance during the year of an allotted amount of drill, generally 12 days or equivalent. In the case of specialist corps the efficiency requirements were greater. Camps, inspections, musketry, and field-training parades count for efficiency. The attendance of militia forces at the camps held during 1911 is shewn in the accompanying tables:—

#### ATTENDANCE OF MILITIA FORCES AT CAMPS OF CONTINUOUS TRAINING, 1911.

Arm.				Total Strength at date of Camp.	Total Average Daily Attendance.	Percentage of Average Daily Attendance to Strength.
<b>MILITIA—</b>						
Command Staffs	...	...	...	46	39	85
Light Horse	...	...	...	5,512	4,418	81
Field Artillery	...	...	...	1,315	1,142	87
Garrison Artillery	...	...	...	1,183	903	77
Engineers	...	...	...	900	810	90
Infantry—Militia	...	...	...	11,395	9,102	80
Intelligence Corps	...	...	...	41	31	75
Corps of Signallers	...	...	...	270	235	87
Army Service Corps	...	...	...	356	328	92
Army Medical Corps	...	...	...	768	689	88
Army Veterinary Corps	...	...	...	17	13	76
Total Militia	...	...	...	21,803	17,710	81

The numbers classed as “efficient” for the year 1910-11 were as follows:—

#### EFFICIENTS (MILITIA FORCES), 30th JUNE, 1911.

Force.				Strength on 30th June, 1911.	Efficients.	Percentage of Efficients to Strength.	Non-Efficients
Militia	...	...	...	21,638	17,077	69	4,561

Of the 55,400 members of rifle clubs in Australia, 34,701 or 61 per cent. were efficient in 1910-11.

**2. The Defence Acts of 1909, 1910 and 1911.**—The principal provision of the Act of 1909 is the addition of enactments relating to universal obligation in respect of naval and military training; the making of regulations exempting from service (persons with objections to service on religious grounds being exempt in any case); registration and enrolment for naval and military training; and establishment of a military college. Authority is provided for the establishment and maintenance of factories for the manufacture of naval and military equipment and uniforms; and for the employment of persons in a civil capacity for any purpose in connection with the Defence Force, or in any factory established under the Act. Owners of horses, vehicles, etc., which may be impressed for defence purposes, may be required to register them periodically, and any land may be entered under proper authority. Intoxicating and spirituous liquors are forbidden in camps and canteens. The provisions of the Acts of 1909, 1910 and 1911, regarding periods of universal training, are set out below (pages 1081-2). Heavy penalties may be exacted from persons who evade service, and from employers who prevent employees from serving. Exemptions from training in time of peace are permitted to those medically unfit; to those not substantially of European origin or descent (except duties of a non-combatant nature); to school teachers qualified as naval or military instructors, or who are officers of cadets; to members of permanent forces. Specified areas may be exempted. Registration of all liable to serve is prescribed. A Military College under a director and staff is to be established, and instruction is to be given by its graduates to the citizen forces.

The Act of 1910 is an extension of that of the previous year. The exemptions from service are further defined, and comprise membership of Parliament; the holding office as judges, magistrates, constables, prison warders, and lighthouse keepers. Hospital doctors and nurses, non-Europeans, and persons with conscientious objections to bearing arms, are to be exempted from duties other than those of a non-combatant nature. Burden of proof of exemption rests on the person claiming it. Authority is given for the establishment and maintenance of horse depôts, farms and stations for the breeding of horses. Uniforms are to be free to all ranks of the citizen forces. The period of adult training is extended to seven years, in place of two years provided under the Act of 1909, and the duration of service with the adult reserves is consequently shortened to one year instead of six. The organisation and duties of the Commandant and members of the Military College are further defined, and provision is made that any member of the forces over the age of nineteen years who passes the prescribed examination may be admitted to the college.

The Act of 1911 shortens the hours of parade for Senior Cadets by about one-third, and provides for leave of absence on account of weather, or residence at a distance from parade ground.

## § 5. The New Defence System.

**1. Defence Policy.**—(i.) *Peculiar Position of Australia.* The Acts of 1909, 1910 and 1911 were the direct outcome of the feeling, shared by all classes of the community, that Australia was insecure under the voluntary system. Recently, the Minister of Defence referred to the fact that if on a map of the world all the countries stained with blood were to be marked, Australia would be the only white spot. It is the national policy to effect a guarantee, by thorough preparation for war, that this exemption should continue.

(ii.) *Continuity of Administration.* Under the recent Acts the system of administration by naval and military boards continues. The Governor-General is empowered to make appointments and promotions of naval and military officers; appoint an officer to command the whole or any portion of the naval forces; appoint military districts and

sub-districts; raise, organise and maintain permanent and citizen naval and military forces, as may be deemed necessary for the defence and protection of the Commonwealth and of the several States.

(iii.) *Compulsory Training.* By the Defence Acts of 1903 and 1904 all male inhabitants of Australia between the ages of 18 and 60 years were made liable to serve in the defence forces *in time of war*. The recent Acts make training and service compulsory *in time of peace*. By the Act of 1909 the principle of universal liability to be trained was made law for the first time in any English-speaking community. The liability is upon all male inhabitants of Australia (except those specially exempted), who have resided in the Commonwealth for six months and are British subjects.

**2. The Military Scheme.**—(i.) *The Land Army.* The Act of 1909 prescribed Junior cadet training for lads 12 and 13 years of age, followed by Senior cadet training for lads from 14 to 18 years of age, equivalent in duration to sixteen whole days annually (of which eight should be in camps of continuous training), the remainder being divided into convenient parades throughout the year. Thereafter adult training for two years in the citizen forces equal to sixteen days annually (eight in camp), followed by registration or one muster parade each year for six years. The existing citizen forces were to be continued. Arrangements for registration, enrolment, inspection, and medical examination of all persons liable to be trained were made, and it was enacted that a Military College should be established. Some modifications were introduced in the Acts of 1910 and 1911.

(ii.) *Visit and Report of Viscount Kitchener.* Before the Act came into operation, viz., at the end of 1909, Field-Marshal Lord Kitchener visited Australia at the invitation of the Government, and after inspecting the military forces at work at camps held at various places throughout the Commonwealth, and the forts and defence works erected or in course of erection, reported upon the whole scheme of land defence. His recommendations (with the exception of some confidential matters) were made public in the form of a memorandum in February, 1910. A scheme was propounded, its main principles being in conformity with the Defence Acts 1903-9. The adoption of some of Lord Kitchener's recommendations necessitated further amending Acts. The trend and purport of the published report are given in the Commonwealth Year Book, No. 4, pp. 1085-1088.

**3. Organisation of Land Forces under the Defence Act 1903-11.**—(i.) *Proclamation.* The Defence Act 1910, passed by the Parliament which was returned at the elections of April, 1910, came into operation on 1st January, 1911, by proclamation. Some slight modifications were made in the Act of 1911. On account either of sparseness of population or difficulty regarding communications (either of which reasons would entail expenditure incommensurate with military efficiency), certain areas are exempted. In all other parts of the Commonwealth territory the clauses decreeing universal training are proclaimed.

(ii.) *Establishments.* The proposed organisation is based upon necessary considerations of (a) the numbers available; (b) the length of service demanded; (c) the proportion of the various arms required. It differs in some of its details from the scheme propounded by Lord Kitchener and includes—

28 regiments of light horse;  
56 batteries of field artillery;  
92 battalions of infantry;

and a due proportion of engineers, army service, and army medical corps, troops for forts, and other services.

(iii.) *Military Population.* In connection with the numbers available the figures of estimated male population are of interest. The total number at cadet age, *i.e.*, between 12 and 18, at the census of 1911 (3rd April) was about 260,000; at citizen soldier age, *i.e.*, between 18 and 26, 366,000; these latter, with 330,000 at ages between 26 and 35, give 696,000 as the total males at the best period for military service. In addition there were about 614,000 between 35 and 60.

(iv.) *Compulsory Provisions.* The actual requirements under the scheme enumerated in sections 125, 126, and 127 of the Defence Act 1903-1911, are as follows:—

*Section 125.* All male inhabitants of Australia (excepting those who are exempted by this Act) who have resided therein for six months shall be liable to be trained, as prescribed, as follows:—

- (a) From 12 to 14 years of age, in the junior cadets;
- (b) From 14 to 18 years of age, in the senior cadets;
- (c) From 18 to 25 years of age, in the citizen forces; and
- (d) From 25 to 26 years of age, in the citizen forces.

Provided that, except in time of imminent danger of war, service under paragraph (d) shall be limited to one registration or one muster parade.

*Section 126.* (a) The training in the junior cadets shall begin on the first day of July in the year in which the persons liable reach the age of 12 years, and shall continue for two years;

Provided that, in the case of persons who reach the age of 13 years in the year in which this Part commences, the training shall begin on the first day of July in that year, and continue for one year.

(b) The training in the senior cadets shall begin on the first day of July in the year in which the persons liable reach the age of 14 years, and shall continue for four years;

Provided that, in the case of persons who reach the age of 15, 16, or 17 years in the year in which this Part commences, the training shall begin on the first day of July in that year and continue for three years, two years, or one year respectively.

(c) The training in the citizen forces shall begin on the first day of July in the year in which the persons liable reach the age of 18 years, and shall continue for seven years.

*Section 127.* The prescribed training shall be, in each year ending the 30th June, of the following duration:—

- (a) In the junior cadets 120 hours; and
- (b) In the senior cadets four whole-day drills, twelve half-day drills, and twenty-four night drills; and
- (c) In the citizen forces sixteen whole-day drills or their equivalent, of which not less than eight shall be in camps of continuous training.

Provided that in the case of those allotted to the naval forces and to the artillery and to the engineers in the military forces, the training shall be twenty-five whole-day drills or their equivalent, of which not less than seventeen shall be in camps of continuous training.

Provided also that in the senior cadets the duration of a whole-day drill shall not be less than four hours, of a half-day drill not less than two hours, and of a night drill not less than one hour.

Provided also that in the Citizen forces the duration of a whole-day drill shall not be less than six hours, of a half-day drill not less than three hours, and of a night drill not less than one hour and a half.

Provided also that in the senior cadets the number and duration of half-day and night drills may be varied by the substitution of other drills as prescribed of a total duration of not less than sixty-four hours.

Provided also that the Minister may, by *Gazette* notice, declare that whole-day drills and half-day drills may be substituted for night drills in any districts or localities specified in the notice.

Provided also that in the case of senior cadets, who reside over two miles from the place appointed for training, attendance for a less number of hours than prescribed above may be allowed to count as prescribed for the full statutory duration of drills, and power may be given to the prescribed officers to grant leave of absence from training required by this Act when the conditions of the weather, by reason of excessive rain or heat, would render attendance a hardship; and equivalent attendance as prescribed may be required in lieu thereof.

The provisions for registration and inspection are contained in sections 142, 143, and 144 of the Act, and are as follows:—

*Section 142.* All male persons of Australia, who have resided therein for six months, shall register themselves or be registered by a parent, guardian, or other person acting in *loco parentis*, in the manner prescribed—

(a) During the month of January in the year in which they reach the age of 14 years (or, in the case of persons who in the year in which this part commences will reach the age of 15, 16, or 17 years, during the month of January in that year), or

b) If not then present in Australia, or if for any other reason not registered at the prescribed time, within such further time and in such manner as is authorised by the regulations.

Any proceedings for an offence against this section may be instituted at any time within two years after the commission of the offence.

*Section 143.* (a) All persons liable to be trained under paragraphs (c) and (d) of section 125 of this Act and not exempted by this Act shall be allotted to the several arms and corps:

(b) Of all persons liable to be trained such a number as are required shall first be allotted for training in the naval forces.

(c) All persons liable to be trained under paragraphs (b), (c), and (d) of section 125 of this Act who are forbidden by the doctrines of their religion to bear arms, shall, so far as possible, be allotted to non-combatant duties.

*Section 144.* All persons liable to be trained shall attend at the prescribed times and places for inspection, and shall give such information as is prescribed, and shall submit to the prescribed medical examination.

(v.) *Exemptions and Disabilities for Service.* Exemptions from service are set out in sections 61, 61a, 138, 140, and 140a of the Act, as given below:—

*Section 61.* The following shall be exempt from service in time of war, so long as the employment, condition, or statute on which the exemption is based continues:—

(a) Persons reported by the prescribed medical authorities as unfit for any naval or military service whatever; and



- (b) Members and officers of the Parliament of the Commonwealth or of a State ; and
- (c) Judges of Federal or State Courts, and police, stipendiary, or special magistrates of the Commonwealth or of a State ; and
- (d) Ministers of religion ; and
- (e) Persons employed in the police or prison services of the Commonwealth or of a State ; and
- (f) Persons employed in lighthouses ; and
- (g) Persons employed as medical practitioners or nurses in public hospitals ; and
- (h) Persons who are not substantially of European origin and descent, of which the medical authorities appointed under the regulations shall be the judges ; and
- (i) Persons who satisfy the prescribed authority that their conscientious beliefs do not allow them to bear arms ; and
- (j) Persons engaged in any employment specified by the regulations or by proclamation.

Provided that, as regards the persons described in paragraphs (g) (h) and (i) of this section the exemption shall not extend to duties of a non-combatant nature.

*Section 61a.* Where any question arises as to whether a person is exempt from service in the citizen forces, the burden of proving the exemption shall rest on the person claiming the exemption, and applications for exemption shall be decided by the Courts authorised in that behalf by the regulations.

*Section 140.* The Governor-General may by proclamation—

- (a) Exempt from the training in time of peace, all persons residing within any area specified in the proclamation ;
- (b) Vary or extend any area so specified ; or
- (c) Withdraw any exemption under this section ; or
- (d) Limit any exemption under this section to any part of the training required by this Act.

*Section 140a.* The Governor-General may by proclamation grant a temporary exemption for a period not exceeding one year to—

- (a) Persons who reside outside the areas in which training is carried out ; and
- (b) Persons who reside at so great a distance from the places appointed for training that compulsory attendance at the training would involve great hardships.

*Section 138* added to the exemptions permitted under section 61 the following:—

- (a) School teachers who have qualified at a school of naval and military instruction, or other prescribed course, as instructors or officers of the junior or senior cadets.
- (b) Members of the permanent naval or military forces.

It is also provided that—

Persons who are students at a Theological College as defined by the regulations, or theological students as prescribed, may, while they remain such students, on application, be exempted by any prescribed authority from the prescribed training, but shall, on ceasing to be such students, undergo such equivalent training as prescribed, unless exempted by some provision of this Act.

Certificates of exemption will be issued in proclaimed areas by the area officer, in exempt areas by an officer specially appointed. In case of dispute the matter will be referred to the Brigade-Major or Commandant. If the decision of this officer is not accepted,

application may be made by the person claiming exemption to the Courts authorised in that behalf by the regulations, whose decision is final. Burden of proof rests upon the claimant.

Any person who has been convicted by a Court of a disgraceful or infamous crime, or is of notoriously bad character, is permanently disqualified for service.

(vi.) *Penalties for Prevention or Evasion.* Employers may not prevent their employees from serving; nor may persons liable to service fail to perform it. The provisions of the Act regarding prevention and evasion are:—

*Section 134.* (a) No employer shall prevent, or attempt to prevent, any employee who is serving or liable to serve in the cadets or citizen forces, and no parent or guardian shall prevent any son or ward who is so serving or liable to serve, from rendering the personal service required of him, or from attending any camp of instruction appointed to be held by the headquarters of the Commonwealth or any military district, and no employer shall in any way penalise or prejudice in his employment, or attempt to penalise or prejudice in his employment, any employee for rendering or being liable to render such personal service, or for attending such camp, either by reducing his wages or dismissing him from his employment or in any other manner:

Provided that this section shall not be construed to require an employer to pay an employee for any time when he is absent from employment for the purpose of training.

Penalty: One hundred pounds.

(b) In any proceedings for any contravention of this section, it shall lie upon the employer to show that any employee, proved to have been dismissed or to have been penalised or prejudiced in his employment or to have suffered a reduction of wages, was so dismissed penalised or reduced for some reason other than for having rendered or being liable to render the personal service required of him or from attending the camp.

*Section 135.* (a) Every person who in any year, without lawful excuse, evades or fails to render the personal service required by this Part shall be guilty of an offence, and shall, in addition to the liability under section one hundred and thirty-three of this Act,<sup>1</sup> be liable to a penalty not exceeding One hundred pounds and not less than Five pounds:

(b) Any penalty under this section may be recovered summarily on the information or complaint of a prescribed officer.

(c) In fixing the amount of the penalty, the Court shall have regard to the means of the person offending and those of his parents.

(d) In addition to any penalty imposed, or (where the Court is of the opinion that the imposition of a penalty would involve undue hardship) in lieu of imposing any penalty, the Court may, if it thinks fit, commit the offender to confinement in the custody of any prescribed authority for a time corresponding in duration to the time which, in the opinion of the Court, would be taken up in rendering the personal service required.

(e) Any person committed to the custody of a prescribed authority in pursuance of this section may be detained by that authority at any prescribed institution or place, and while so detained shall be subject to the regulations governing that institution or place, and to the training and discipline as prescribed.

(f) It shall not be necessary for the confinement to be continuous; but the person having the custody of the offender may (subject to the regulations) release him for such periods, and call upon him to return to custody at such times, as he thinks fit; to the intent that he may follow his occupation, and that the times and periods of his confinement may correspond, as nearly as practicable, with the times and periods which he ought to have occupied in rendering personal service.

(g) Any person detained in any prescribed institution or place in pursuance of this section who escapes therefrom, or who being released from custody fails to return thereto, may be arrested without warrant by any prescribed person, and taken back to the institution or place, and may on the application of any prescribed officer be ordered by any

1. Section 133 enacts that non-efficient must attend an equivalent additional training for each year they are non-efficient.

Court of summary jurisdiction to be detained for such additional period not exceeding twenty days as the Court thinks fit to order.

*Section 136.* Every person who, without lawful excuse, evades or fails to render the personal service required by this Part shall, unless and until he has performed equivalent personal service as prescribed, be and remain ineligible for employment of any kind in the Public Service of the Commonwealth.

(vii.) *Efficiency Requirements.* The requirements for efficiency in the senior cadets comprise attendance at compulsory parades, as follows:—

- 4 whole-day drills of not less than four hours each; and
- 12 half-day drills of not less than two hours each; and
- 24 night drills of not less than one hour each.

These statutory parades will be increased by extra voluntary parades, the object of which is to enable those who are backward to become proficient, and those who desire to qualify for promotion to obtain the necessary practice. Where leave of absence has been given from a statutory parade, attendance at a voluntary drill will count towards the efficiency requirements; but a statutory parade missed without leave requires two voluntary parades as compensation.

At the end of the year's training, a Board of Officers will classify the trainee as efficient, or otherwise. Those not efficient must do an extra year's training for each failure. Thus there must be twelve annual entries of efficiency or exemption in each soldier's record, before he receives his discharge.

Variations may be permitted in the compulsory half-day and night parades, but a total of sixty-four hours must be served. The whole day parades will usually be held on public holidays. Schools, containing at least sixty senior cadets, may form separate units, and may arrange their parades to suit their school time table; but the cadets must attend the battalion parades.

The efficiency requirements for citizen forces and reserves have not yet been promulgated.

(viii.) *Allotment to Arms.* During senior cadet training there will be no allotment to the various arms of the service. The work of the trainee will cover the foundation work necessary for service in any arm, viz.:—Marching, discipline, the handling of arms, musketry, physical drill, first aid, guards and sentries, tactical training as a company in elementary field work, and elementary battalion drill. Thereafter the cadet with special educational or technical qualifications will be drafted as a recruit to one or other of the specialist or departmental corps, other cadets passing to the "line regiments" of the Australian Army—the light horse and infantry.

(ix.) *Uniform and Equipment of Senior Cadets.* The uniform is simple and inexpensive, but suitable. It consists of hat, woollen shirt, woollen breeches, and puttees. It is free, and issuable every second year. There is no distinction, and uniform will be worn at all parades and drills. Wearing of uniform when not on military duty or proceeding to or from parade is forbidden.

Equipment consists of a cadet rifle with sling and a waist-belt with pouch. The elder senior cadets who are good shots (but not exceeding 10 per cent. of the strength) are allowed .303 (service) rifles. Free ammunition is provided, 150 rounds of ball being available for each cadet. Arms must be kept in the offices or storerooms of the units, and issued for parades only. On no account are arms permitted to be taken to the cadets' homes.

(x.) *Citizen Forces.* On 1st July, 1912, the eldest class of those who commenced senior cadet training on 1st July, 1911 (viz., those born in the year 1894) pass as recruits to the various arms of the new citizen force, forming its first members. Uniform will be simple and suitable for service, and the issue to each soldier will be such that he is able to parade (upon notice) with two woollen shirts, two pairs breeches, greatcoat, hat, sleeping-cap, two pairs puttees or leggings, two pairs military boots, and kit-bag. The future force is planned to comprise 120,000 of all ranks

including about 5000 citizen officers and 8000 non-commissioned officers. Promotion will be absolutely by merit, the principle adopted being that *the best soldiers must lead, whatever their civil avocation or birth.*

(xi.) *Reserves.* No new reserves are created under the Acts of 1909, 1910 and 1911. The present reserves consist of (a) officers, etc., retired from active service; (b) members of rifle clubs. Provision will probably be made for those who, at the age of 26 years, pass out of the organisations created under the Act, to continue service with rifle clubs; but if this is not enacted, it is considered probable that a large proportion of the fully-trained citizen soldiers will remain members of the clubs.

(xii.) *Number under Training.* The male population of Australia of military age gives about 177,000 between 14 and 18 years, and about 321,000 between 18 and 25 years. The estimated medical rejections (based upon the experience of European countries) will probably be 10 per cent. for senior cadets, and from 30 to 35 per cent. for citizen soldiers. To these must be added persons in exempt areas. The number under training, when the system is in full operation, is estimated at 100,000 senior cadets, and 120,000 citizen soldiers.

(xiii.) *Allotment of Units to Divisional Brigade, Battalion, and Training Areas.* Three brigades will form a division. Two brigade areas will each provide four battalions of infantry, one field artillery brigade (with proportion of divisional ammunition column), one field company of engineers, one company army service corps, and one field ambulance. The other brigade of the division provides four battalions of infantry, two squadrons of divisional light horse, one howitzer or heavy battery, one divisional signal company of engineers, one company army service corps, and one field ambulance. Light horse, and field artillery units for light horse brigades will also be furnished by some of the areas. Personnel for garrison artillery and submarine and electric engineers for field forces will eventually be supplied in the areas nearest to such localities. The average annual contingent of recruits will be about 155 for each battalion area, plus such additions as are required for light horse and field artillery units raised therein. The figures shewn in the following tables are approximate, and include the recruits (18-19 year), but not the 25-26 year men.

#### ALLOTMENT OF UNITS TO BRIGADE, BATTALION, AND TRAINING AREAS.

State.	Brigade Areas.	Battalion Areas.							Training Areas,
	No.	No. of Battalions.	Providing the undermentioned units.				Total Nos. in Training in Areas.	No.	
			Infantry and Proportion of Engineers, A.S.C. and A.M.C.	Light Horse.		Field Artillery.			
				Nos.	Squadrons.	Nos.			Batteries.
—	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
N. S. Wales ...	7	29	28,913	36	4,041	19	3,059	36,013*	65
Victoria ...	8	33	32,901	40	4,490	20	3,220	40,611†	75
Queensland ...	3	11	10,967	16	1,796	7	1,127	13,890‡	28
S. Australia ...	2	9	8,973	12	1,347	5	805	11,125§	24
W. Australia	2	6	6,979	4	449	3	483	7,911	20
Tasmania ...	1	4	3,988	4	449	2	322	4,759¶	13
Totals ...	23	92	92,721	112 28 Rgts.	12,572	56	9,016	114,309**	224

\* Also 766 for forts. † Also 327 artillery and 237 engineers at Geelong and Queenscliff for forts. ‡ Also 79 garrison artillery and 13 engineers for Lytton. § Also 86 artillery for forts. || Also 156 artillery and 32 engineers for forts. ¶ Also 85 artillery and 32 engineers for forts. \*\* Also 1804 for forts.

(xiv.) *Higher Training.* The principal institution for the higher training of officers is the Military College, which has been established at the Federal capital. Entrance is by competitive examination, the first of which was held in February, 1911. Lectures and studies commenced at the college in the same year. The course will last four years, and will be followed by a tour of duty in England or India, and a probationary year at area work. Graduates will eventually take the place of the area officers at present engaged; but it will be six years before any graduate of the college will be available; and fifteen years before all the area positions are supplied from it.

Government aid is also furnished to United Service Institutions, which have been established in the larger centres. Lectures of great value are delivered by specialists, and war games, manœuvres, etc. carried out. Some of the institutions have large and well-selected libraries.

Schools of instruction, staff tours, etc., are also conducted, and a military magazine is published.

(xv.) *Record for Anthropometric Purposes.* In connection with the medical inspection, it has been arranged that the colour and character of hair, and the colour of eyes, of those examined shall be recorded for statistical purposes. Instructions have been compiled by the Commonwealth Statistician, in accordance with which the area officers will classify the hair-colour under four divisions, comprising three types of fair, two of reddish, three of brown, and two of black. The character of the hair is recorded also in four divisions, viz.: (a) perfectly straight and smooth; (b) wavy and curly; (c) frizzy; (d) woolly. Intermediate types are to be classed under the heading to which they approach most nearly. The eye-colour will be classified under four divisions, comprising sixteen types, viz., four of greyish, four of bluish, four of yellowish, and four of brown and hazel.

It is possible that later the recommendations of the British Anthropometric Committee will be adopted.

The object of the investigation is to study the development of the Australian nation, the necessary statistic for military identification purposes affording a unique opportunity. A possibility exists of co-ordinating anthropometric work in the schools with that done in connection with compulsory military service.

**4. Compulsory Training in Operation.**—(i.) *Inauguration of the System.* The first work in the active carrying out of the scheme commenced with the training of 200 non-commissioned officers for the instruction of the projected army in a six months' camp. Area officers were chosen from the citizen forces, and underwent a six weeks' course of instruction. With the year 1911 came the active enrolment of the new cadets; the total registrations in training areas up to 31st January exceeded 120,000. These, with belated enrolments in later months, commenced training on 1st July following.

(ii.) *Stages.* The stages are as follows:—

First stage, January to June, 1911.—Existing junior and senior cadets continued to 30th June, 1911, but all equipment returned by that date; registration, inspection, and medical examination of lads whose 14th, 15th, 16th, and 17th birthdays occurred in 1911; preparations made to clothe and equip the new senior cadets.

Second stage, July, 1911, to June, 1912.—Registration, etc., of lads whose 14th birthday occurs in 1912; new junior and senior cadet training from 1st July, 1911. Of the latter, about 20,000 will pass as recruits, inaugurating the new citizen forces in the third stage.

Third stage, July, 1912, to June, 1913.—Registration, etc., of lads whose 14th birthday occurs in 1913; new citizen forces, training begins with 20,000 recruits (18 year old persons drafted from the new senior cadets). During the third, fourth, and subsequent stages the new senior cadet force, numbering 100,000, will continue. During this period the establishments under the new organisation will be completed.

Fourth and subsequent stages, after July, 1913 (and each year).—Registration, etc., of lads whose 14th birthday occurs in 1914, and so on. In the fourth and subsequent stages, the new citizen forces will also be continued, increasing each year by 20,000.

(iii.) *Summary of Working of the System in 1911-12 (Second Stage).* The following table gives a summary of work done under the new scheme up to 31st December, 1911:—

### UNIVERSAL TRAINING.—REGISTRATIONS, MEDICAL EXAMINATIONS, AND EXEMPTIONS TO THE 31st DECEMBER, 1911.

#### SENIOR CADETS.

Military District.	Total Registrations in Training Areas.	Total Medical Examinations.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit or Temporarily Unfit.	Total Exemptions granted in Training Areas.	Total Number liable for Training.	Total Number actually in Training.
1st (Queensland) ...	24,466	14,413	13,361	92.7	1,052	7.3	11,631	12,388	11,808
2nd (N.S.W.) ...	54,390	37,860	35,235	93.1	2,625	6.9	18,841	34,280	33,151
3rd (Victoria) ...	48,569	33,054	31,014	93.8	2,040	6.2	16,437	29,692	28,653
4th (S. Australia) ...	14,685	11,307	10,580	93.6	727	6.4	5,544	9,144	8,576
5th (W. Australia) ...	6,894	5,191	4,650	89.6	541	10.4	2,726	4,168	3,833
6th (Tasmania) ...	6,129	3,417	3,259	95.4	158	4.6	2,770	3,357	3,117
Commonwealth ...	155,133	105,242	98,099	93.2	7,143	6.8	57,949	93,029	89,138

### UNIVERSAL TRAINING.—MEDICAL EXAMINATIONS TO THE 31st DECEMBER, 1911.

#### JUNIOR CADETS.

Military District.	Total Number Medical Examinations.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit and Temporarily Unfit.
1st (Queensland) ...	4,521	4,372	96.7	149	3.3
2nd (N. S. Wales) ...	12,621	12,275	97.3	346	2.7
3rd (Victoria) ...	13,129	12,970	98.8	159	1.2
4th (S. Australia) ...	1,896	1,839	97	57	3
5th (W. Australia) ...	1,303	1,269	97.4	34	2.6
6th (Tasmania) ...	297	293	98.7	4	1.3
Commonwealth ...	33,767	33,018	97.8	749	2.2

(iv.) *Registration in 1912.*—Up to the end of April, 1912, the registration of those liable to commence service in the Senior Cadets in that year (*i.e.*, those born in 1898) was 27,086.

(v.) *Territorial Organisation and Instruction.* The territorial organisation of the Commonwealth is one of areas based upon infantry units. There are 92 battalion areas, approximately equal in number of males of citizen soldier age, and each containing a battalion of infantry, with either a battery of field artillery (in urban districts), or a regiment of light horse (in country districts), and also a larger or smaller number of one or more other arms, departmental corps, etc. For internal administrative purposes, the battalion areas are subdivided into two or three training areas. Brigade areas are formed by grouping four battalion areas.

The instructors provided for training existing units and for territorial work in connection with the new system consist of 58 officers and 425 warrant and non-commissioned officers of the instructional staff (permanent), and 219 area officers (temporary). They supervise the training of light horse, infantry, and senior cadet units, and instruct in the non-technical duties of specialist corps. Additional officers and non-commissioned officers in the permanent troops will instruct in technical work.

The officers of the instructional staff act as Brigade-Majors, and as such represent the Commandant in the brigade area. They are responsible for the instruction of officers of the existing citizen forces, conduct local schools of instruction, supervise and instruct the area officers, and allot the non-commissioned officers of their detail to various duties. Assistant Brigade-Majors are also furnished from the instructional staff. The duties of area officers vary both in nature and extent, and comprise registration and organisation of those to be compulsorily trained; clothing, arming, equipping, and training the new senior cadets; and training recruits in the citizen forces. They also relieve citizen officers of administrative work, and perform the duties of adjutant to militia units.

The staff instructors (warrant and non-commissioned officers) carry out the administrative work of their areas or units, and instruct cadets and recruits in light horse and infantry drill and tactics.

The area officers do not undertake the registering and inspection of junior cadets. There is no provision in the Act for registration before the 14th year; but when the junior cadet presents himself for registration before the area officer, it will be necessary for him to show that he has complied with the requirements of the Act during the two preceding years. State Inspectors of Schools and special inspectors of physical training approved and appointed by the Minister of Defence, undertake the supervision of the great body of the junior cadets, the training being in the hands of school teachers, who have been specially instructed for the purpose. The area officer and staff instructors visit schools where the training is not carried out by the schoolmasters.

(vi.) *Proposals for 1912-13 (Third Stage).* The training of adults under the Universal Training clauses of the Act will commence on 1st July, 1912, with the drafting of the 18 year old trainees, i.e., those born in 1894, to the militia forces. The following are the proposals:—The medical examination is to be completed by 31st March, 1912. Those returned as passed will pass into the militia forces, developing and augmenting the existing units. Soldiers now serving in these units will be allowed to continue to serve until the termination of their term of enlistment, when they will be retired; but warrant and senior non-commissioned officers may be re-engaged. All arms except light horse will be maintained by annual quotas transferred from the senior cadets, as laid down in new Peace and Training establishments. When these are reached these units will be required to detail sufficient officers, non-commissioned officers, and men to form the nuclei of new units. If any existing unit is not considered by the Military Board to be sufficiently efficient to justify its retention, such unit will be disbanded. Also, if an existing unit is so widely scattered as to be costly and inconvenient

for administration, such unit will be divided, and will form nuclei for new units which will be raised in the localities in which the scattered portions are located. Except in the case of the light horse, augmentation of existing units will be by transfers from the senior cadets only. In light horse units, in the case of those raised outside the five mile radius of any training locality all recruiting will be voluntary, and in other cases voluntary enlistments may be allowed if there are not sufficient universal trainees having horses available to keep up the establishment. Tables have been prepared shewing how existing units will be augmented in each brigade area, new units raised, and universal trainees allotted as they reach the age of 18 years, for the next seven years. The tables also shew how the existing units will eventually be merged into the new organisation. Trainees posted to the militia forces will be known as recruits for the first year of service. Recruits will be invited in the first instance to volunteer for the branch in which they desire to be trained. In the event of there being too many volunteers the required numbers are to be selected by the brigade majors. If there are too few the required numbers will be posted by the area officer in consultation with the brigade major. Persons forbidden by the doctrines of their religion to bear arms shall, as far as possible, be allotted to non-combatant duties. On the 1st July, 1912, postings to the militia forces of the 1894 class will be promulgated, and then recruit training will commence. Until the scheme reaches its full development the required numbers from rifle clubs will continue to be allotted annually to each unit in order to meet the requirements of mobilisation.

**5. The Naval Scheme.**—(i.) *Historical.* An outline of the development of the Australian naval policy will be found in Commonwealth Year Book No. 3, pp. 1060, 1061. For the more effective coastal defence of the Commonwealth it was decided in 1901 to create a naval force, Australian in character, to replace the squadron at present maintained under the naval agreement with the British Government. Australia would thus have a navy, not merely a marine defence force. Engagements were entered into for the construction of three torpedo boat destroyers, two to be built in Britain, the other to be shipped to Australia in parts, and put together here. Proposals were also made for the construction of vessels in Australia. Skilled artisans were despatched from Australia to gain practical experience in the building of the vessels, and crews were specially trained for the service of them when completed.

(ii.) *Development of the Australian Navy.* The policy of development has continued with but slight variations in the proposals, despite three recent changes of Ministry.

A member of the Ministry, accompanied by naval and military expert advisers, attended the Imperial Defence Conference in London. The principal object of his mission was to concert with the other representatives as to the best measures to be taken to meet a common menace, particularly in the Pacific, where there must always be an outlet for Australian trade. The position was accepted that the burden of defence must in future be borne, not by part, but by the whole of the Empire, and therefore Australian plans and preparations must have the safety of the whole in view. As a fuller Imperial partnership is indispensable to the future security of the Imperial fabric, so a definite place in the Pacific must be allotted to Australia, as to other members of the Empire. It was agreed that Australia should provide a fleet unit, consisting of an armoured cruiser\* of the *Indomitable* class, three unarmoured cruisers of the *Bristol* class, six destroyers of the improved "River" class, and three submarines of "C" class †; also the necessary auxiliaries, such as docks and dépôt ships, for this fleet, which is to form a complete naval unit, and is to be one of the three divisions of the Eastern fleet. It was stated that the British Government might provide an addition to this fleet. The cost of construction at English prices would be about £3,750,000, and the estimated annual cost about £750,000. Of this sum the Imperial Government offered to contribute £250,000, but the Commonwealth Government decided to bear the whole cost.

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\* Now called "battle cruiser."

† Since altered to two submarines of "E" class.



The first instalment of the Australian fleet unit consists of the destroyers already constructed. One was launched at Govan-on-the-Clyde, on 9th February, 1910; a second at Dumbarton on 9th April following. The vessels are named after Australian rivers, those launched having been christened *Parramatta* and *Yarra*. They were commissioned in September, 1910, as ships of the Royal Navy, and left Portsmouth on 19th September on their voyage to Australia. Crews had been sent from Australia to man the destroyers, and the Admiralty loaned 30 ratings to furnish the complements. The Admiralty also arranged for the cruiser H.M.S. *Gibraltar* to be in touch with the destroyers throughout the voyage. In December, 1910, the vessels arrived in Australia. A third destroyer, the *Warrego*, was shipped to Sydney in parts. She was re-erected at the New South Wales Government dockyard, Cockatoo Island, Sydney, launched on 4th April, 1911, and commissioned on 1st June, 1912. These destroyers are each of 700 tons displacement, with a length of 245 feet; beam of 24 feet 3 inches; draft, 8 feet 11 inches; depth, 14 feet 9 inches. They have turbines, water-tube boilers and oil fuel, and have a legend speed of 26 knots. The armament consists of one 4-inch 30-pounder, three 12-pounders, and three 18-inch deck discharge tubes for torpedoes. The radius of action at cruising speed is nearly 3000 miles. The complement is 66 officers and men. It is intended to build the other three destroyers (to be named *Torrens*, *Swan*, *Derwent*) in Australia. The present annual naval subsidy (£200,000) will cease as soon as the larger obligation is taken over. While on the Australian station the ships will be under the exclusive control of the Commonwealth, both as regards movements and general administration, in time of peace, the *personnel* being subject to the King's regulations, and under naval discipline, with standards of efficiency, and opportunities for advancement, as in the Royal Navy. The battle cruiser (*Australia*) and the three 2nd class cruisers (*Sydney*, *Melbourne*, *Brisbane*), with the submarines, will complete the unit, which will pass under Imperial control whenever required for war purposes. It is to be manned as far as possible by Australians, supplemented by Imperial officers and men. A considerable number of the former are available, viz.—(a) those of the present permanent naval forces, and (b) those in training with sections of the British fleet. Provision is made in the *Naval Defence Act* 1911 for enlistment in the Permanent Naval Forces. A permanent naval college is to be established, and the necessary instruction imparted. The captain has been appointed on the recommendation of the British Admiralty, and has arrived in Australia to organise the college. Other officers for the instruction of the cadets have been nominated by the Admiralty, and have also arrived in Australia. A site has been chosen for the college at Captain's Point, Jervis Bay. It will be equipped with all necessary workshops, machinery, etc. In order to expedite the training of officers, a temporary college will be established at Geelong. It is intended that there shall be interchangeability of officers and men, and also of ships. The British Admiralty invited tenders for the *Australia* in January, 1910, and the vessel is now in course of construction. The first portion of the keel was laid on 23rd June, 1910, and she was launched on 25th October, 1911, the date of completion being November, 1912. The ship is of the *Dreadnought* type, *Indomitable* class, about 19,200 tons, with turbine engines. Her speed will be 26 knots, her armament eight 12-inch and sixteen 4-inch guns, and five torpedo tubes. She will have an 8-inch armour belt amidships, and a 4-inch belt at the ends. The estimated total cost of the vessel is £1,800,000. The smaller cruisers, the *Melbourne* and *Sydney*, are being built in Great Britain. The keel of the *Sydney* was laid on 11th of February, 1911, that of the *Melbourne* on 4th April following. The *Melbourne* was launched at Birkenhead on 30th May, 1912. Delivery will probably be made in September, 1912. These vessels will be about 5000 tons displacement, armed with 6-inch guns, and will cost about £450,000 each. It is the intention of the Government to build the third cruiser, the *Brisbane*, in Australia, the raw material being imported. The two submarines are also being built in England, and it is anticipated that the vessels will be delivered early in 1913. Pending completion of the *Brisbane*, the *Encounter* has been lent from the Royal Navy for service in the Royal Australian Navy.

(iii.) *Naval Reserves.* The naval reserves comprise (a) members of the Australian branch of the Royal Naval Reserve, (b) members of the Citizen naval forces, and (c) Senior naval cadets. The navy has first choice from amongst the trainees under the compulsory system.

(iv.) *Visit and Report by Sir Reginald Henderson.* At the invitation of the Government, Admiral Sir Reginald Henderson visited Australia to advise upon the best position for a central naval base, and the works necessary to make it effective; the positions for secondary bases for the service of a fleet, and their equipment for service in naval operations; also upon the location and character of the training schools for preparing *personnel* for the Australian naval service. The Admiral was also requested to report and advise on any other naval matters upon which he might care to express an opinion, and generally, in regard to all the measures to be taken in the formation of a fleet. After an inspection of various harbours, the Admiral propounded a scheme which he embodied in a report to the Government in March, 1911. It provides 52 vessels and 15,000 men; expenditure on ships, £23,290,000, with an ultimate annual naval vote of £4,794,000; construction of docks, £40,000,000. In twenty-two years the expenditure will be £88,500,000. Six naval bases, and eleven sub-bases, are recommended.

The 52 vessels of the completed fleet would be divided into Eastern and Western divisions, and consist of 8 armoured cruisers, 10 protected cruisers, 18 destroyers, 12 submarines, 3 dépôt ships, and 1 fleet repair-ship, the building of which would extend over 22 years. The *personnel* for this fleet, fully manned, would be about 15,000. Of the £23,290,000 initial cost of construction, the Commonwealth is already committed to £3,500,000. The annual cost of *personnel* would be £516,000 in 1912-3; and would increase to £2,226,000 in 1932-3. Annual cost of maintenance of ships in commission would be £262,000 in 1913-4; rising to £1,226,000 in 1933-4. Annual expenditure on construction and maintenance of ships would increase from £1,491,000 in 1912-3 to £4,824,000 in 1932-3. In 22 years the expenditure on the fleet alone would be £73,275,000; this, with an expenditure on fleet and harbour works of £15,225,000, would make a grand total of projected expenditure of £88,500,000. The strength of the fleet would be 23 ships in 1918, 42 ships in 1923, 48 ships in 1928, and 52 ships in 1933. In the earlier years most of the crews would be obtained from Great Britain; but this would cease in the period 1923-8. A system of "wireless" stations is recommended; also the establishment of naval reserves the erection of barracks, and the institution of a naval college.

(v.) *Proposals for Expansion.* The Australian Government has generally adopted Admiral Henderson's report, and naval expansion is proceeding on the lines therein laid down. At present, however, Australia stands committed only to the fleet unit. In the matter of bases the report is concurred in, and action is being taken for the establishment of the various naval bases and sub-bases required for the fleet unit. All the seagoing ships of the fleet will have "wireless" installed. Shore stations are under the control of the Post and Telegraph Department.

(vi.) A vessel (*Sobraon*) purchased from the Government of New South Wales has been fitted up as a boys' naval training ship (*Tingira*), and was commissioned on 25th April, 1912. The full capacity of the ship is 300, of whom 100 start training on 1st June, 1912, and 100 three months later. The age of entry is  $14\frac{1}{2}$  to 16 years. The boys must engage to serve until they reach the age of 25. Upon medical certification of fitness, they will be entered for service in the Royal Australian Navy. It is intended that the boys shall provide the *personnel* of the new fleet unit. The training ship is thus a very important part of the new scheme.

(vii.) *Strength of the Commonwealth Naval Forces, 1912.* The following table shews the strength of the naval forces in March, 1912:—

**STRENGTH OF THE NAVAL FORCES (PERMANENT AND RESERVES),  
1st MARCH, 1912.**

Description of Force.	Number Borne.			Total.
	Officers.	Men.	Cadets.	
Permanent* ...	59	573	...	£632
Administrative and Instructional Staff ...	34	84	...	118
Reserves† ...	33	970	...	1,003
Reserves‡ ...	...	...	3,045	3,045
Total ...	126	1,627	3,045	4,798
Navy Office personnel...	...	...	...	41
Grand total ...	...	...	...	4,839

\* Seagoing. † Late Militia. ‡ Cadets under universal Training. § This number includes 3 officers and 1 petty officer in England on vessels building, etc., 13 officers, 118 petty officers and men who have been recruited in England.

**§ 6. Expenditure on Defence.**

1. **Expenditure, 1905-6 to 1911-12.**—The following table gives the expenditure of the Department of Defence from 1905-6 to 1910-11, and the estimate for 1911-12:—

**EXPENDITURE ON DEFENCE, 1905-6 to 1911-12.**

Branch or Department.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12. Estimate
Administrative—Central Administration ...	£ 18,832	£ 19,246	£ 21,913	£ 23,884	£ 26,358	£ 104,740	£ 1303,882
Naval Forces ...	45,753	50,200	54,069	59,250	63,168	96,291	288,971
Military Forces ...	500,379	535,182	577,490	623,372	853,532	947,948	1,234,762
Rent, Repairs, & Maintenance ...	23,721	27,378	32,014	31,817	29,561	42,782	40,522
Additions and New Works ...	33,556	35,171	46,968	53,965	81,899	177,623	393,180
Defence Arms, Equipment, &c. ...	138,077	159,968	143,950	47,206	196,481	273,387	562,800
Audit Office ...	765	810	817	966	945	1,140	1,116
Pensions & Retiring Allowances ...	907	974	974	1,017	1,306	965	780
Supervision of Public Works by State Officers ...	659	521	700	822	1,046	3,767	3,600
Naval Agreement ...	200,025	200,000	200,000	200,000	200,000	200,000	200,000
Miscellaneous "Other" ...	1,671	6,325	5,849	8,291	20,585	282	...
Fleet Unit ...	...	...	...	...	60,000	1,135,000	1,515,000
Naval Works & Armament ...	...	...	...	...	...	24,780	40,000
Interest and Sinking Fund on Transferred Properties ...	...	...	...	...	...	...	190,523
Total ...	970,345	1,035,795	*1,084,744	1,050,590	1,534,881	3,008,705	4,775,136

\* In addition, the sum of £250,000 was paid into trust fund for harbour and coast defence.

† Includes establishments under the control of the Central Administration.

2. **Estimates, 1911-12.**—(i.) *Comparison with Preceding Year.* The administration estimates for 1911-12 shew an increase of £678,636 on those for the preceding year. The increase is shewn under the following heads:—

Administrative (including establishments under control of Central Administration) ...	... £199,142
Naval forces ...	... 192,680
Military forces, cadets, rifle clubs, and associations ...	... 286,814
	<u>£678,636.</u>
Central Administration (chiefly Naval Administrative Staff)...	... £25,669

(ii.) *Items of Increase.*—Naval maintenance (£288,971) includes £5200 for Naval College; £23,000 for the boys' training establishment; £178,271 for the naval forces; and £64,000 for maintenance of ships and vessels. Uniforms for adult trainees are estimated to cost £86,000. Military maintenance (£1,234,762) includes district headquarters staffs, £24,000; two new permanent field batteries of artillery, £33,153; permanent garrison artillery, £111,173; permanent engineers, £35,331; instructional staffs, £127,732; medical services, £21,160; stores and allowances for senior cadets, £126,500; and universal training expenditure, £252,810.

3. *Expenditure Compared with Various Countries.*—The total expenditure on defence and the expenditure per inhabitant, according to the latest available estimates, are, in the countries indicated, as follows:—

#### EXPENDITURE ON DEFENCE—VARIOUS COUNTRIES.

Country.	Year.	Army.	Navy.	Total.	Per Inhabitant.
		£	£	£	s. d.
Great Britain ...	1910-11	27,760,000	40,604,000	68,364,000	30 3
Germany ...	1910-11	40,409,000	22,109,000	62,518,000	19 3
France ...	1911	35,924,000	16,493,000	52,417,000	26 7
Italy ...	1910-11	12,560,000	7,447,000	20,007,000	11 7
Austria-Hungary...	1910	14,353,000	2,797,000	17,150,000	6 6
Switzerland ...	1911	1,757,000	—	1,757,000	9 5
Russia ...	1910	48,072,000	8,924,000	56,996,000	8 5
Spain ...	1911	7,396,000	1,266,000	8,662,000	8 10
Norway ...	1910-11	782,000	300,000	1,082,000	9 1
Sweden ...	1911	2,776,000	1,077,000	3,853,000	14 1
Denmark ...	1911-12	844,000	539,000	1,383,000	10 0
Holland ...	1911	2,578,000	1,851,000	4,429,000	15 0
Belgium...	1911	2,397,000	—	2,397,000	6 5
United States ...	1911	35,250,000	26,000,000	61,250,000	13 5
Canada ...	1909-10	1,248,000	—	1,248,000	3 6
Japan ...	1910-11	7,461,000	3,848,000	11,309,000	4 2
Australia ...	1911-12	2,731,000	2,044,000	4,775,000	21 5

### § 7. The War Railway Council.

1. *The Constitution of the Council.*—It was suggested by Lord Kitchener that a War Railway Council should be appointed to secure co-operation between the Commonwealth Defence Department and the States Railway Departments in regard to concentration and mobilisation of troops. A conference, whose members comprised staff-officers of the Commonwealth forces and the chief railway commissioners of the States, was held in Melbourne in February, 1911, under the presidency of the Minister of Defence, and in March the report was made available. The decisions were embodied in a series of twenty resolutions. It was recommended that the War Railway Council should be constituted of eleven members as follows:—The quartermaster-general as president; the senior officer of the engineer and railway staff corps of the Commonwealth railway system and of each State railway system, the Commonwealth consulting military engineer, and two representatives of the naval and military forces as members; and a military officer as secretary. An engineer and railway staff corps was proposed, consisting at its commencement of 48 members, composed of officials of the Commonwealth and State Government railways holding honorary military rank.

2. *Duties in Time of Peace.*—The duties of the council in time of peace would be generally to furnish advice to the Minister of Defence on railway matters, and particularly (a) to determine the method of supplying information to, and obtaining it from, the

various railway departments ; (b) to suggest regulations and instructions for carrying out movements of troops ; (c) to suggest the method of organising railway staff officers in time of war, to act as intermediaries between the various railway authorities and the troops ; (d) to consider the question of extra sidings, loading platforms, etc., and proposals towards unification of gauges ; (e) to suggest the organisation and system of training of railway troops when the development of universal training supplies sufficient personnel whose ordinary employment is railway work ; (f) in time of war to advise also on questions of mobilisation.

**3. Control of Railways in War.**—In times of war, the chief commissioner or general manager of any railway system of which the Commonwealth Government assumes control should be appointed Director of Railways, and should have command of "Railway Control Officers" to be specially appointed as intermediaries acting between the railway administration and the troops. The chief duties of these control officers would be (a) to facilitate the transport of troops, animals, and material ; (b) to act as channels of communication between the military authorities and the technical railway personnel ; (c) to advise the local military authorities as to the capacity and possibilities of the railway ; (d) to bring to the notice of the Director of Railways any means by which the carrying power of the railway may, for military purposes, be increased.

**4. Uniform Railway Gauge.**—The Council recommends the adoption of a uniform gauge of 4 ft. 8½ in. on the lines linking up the capitals between Brisbane and Adelaide and also on the proposed transcontinental line from Kalgoorlie to Port Augusta, the cost of conversion to be shared upon a basis to be determined between the Commonwealth and the States.

**5. State Governments' Approval.**—With the exception of the question of uniform gauge, the State Governments have fallen in with the recommendations of the Council. The gauge question is apart from the general scheme, and is under discussion ; the 4 ft. 8½ in. gauge has been decided on for the transcontinental line. The Council was formally established as an adjunct of the Defence Department in December, 1911, and the chief appointments have been made. The establishment is as follows :—14 colonels, to be drawn from railway commissioners and general managers (Commonwealth 3, New South Wales 3, Victoria 3, Queensland 2, South Australia 1, Western Australia 1, Tasmania 1 ; and 45 lieutenant-colonels, to be drawn from the maintenance, traffic, transportation, locomotive and electric branches (Commonwealth 7, New South Wales 7, Victoria 7, Queensland 8, South Australia 4, Western Australia 7, Tasmania 5). Railway Commissioners are rated as commandants.

## § 8. Relation to the Empire.

During the New Zealand wars many colonists served with the British forces, their service generally being purely as individuals. At the outbreak of the war, the *Victoria*, a steam sloop of 450 tons register, with an armament of seven 32-pounders, and a crew of 95, a large percentage of whom had been in the Royal Navy, was offered by the Government of Victoria to the Imperial authorities for service in New Zealand waters. The offer was accepted, and the vessel proceeded to Auckland, calling *en route* at Hobart, where she took on board part of the 40th Regiment (Imperial). The *Victoria* was employed continuously in transport and various operations along the coast until the termination of the war. In 1885 a field battery, an infantry battalion, and an ambulance corps, numbering in all 770, with 218 horses, left New South Wales to take part in the Suakin campaign. Lord Wolseley's despatch of 15th June, 1885, reads:—"The result was so satisfactory that I trust the noble and patriotic example set by New South Wales may, should occasion arise, be followed by other colonies."

In 1899 the outbreak of war with the Boers led to the several colonies offering contingents. This service was continued when, on 1st March, 1901, the control of the

defence forces passed over to the Commonwealth. Besides the troops officially organised many Australians served as individuals in the campaign. The following table shews the strength of the military contingents sent at various times from Australia to South Africa:—

### STRENGTH OF MILITARY CONTINGENTS SENT FROM AUSTRALIA TO SOUTH AFRICA.

State.	State Troops at State Expense.			State Troops at Imperial Expense.			Commonwealth Troops.			Grand Total.		
	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.
New South Wales	160	3,217	3,135	76	1,308	1,443	78	1,271	1,294	314	5,796	5,872
Victoria	47	751	830	77	1,569	1,877	69	1,052	1,118	193	3,372	3,825
Queensland	39	694	868	73	1,346	1,803	37	699	736	149	2,739	3,207
South Australia	20	335	258	46	644	696	23	467	490	89	1,437	1,444
Western Australia	18	331	269	34	540	608	15	291	306	67	1,162	1,183
Tasmania	6	173	58	17	358	422	13	290	303	36	821	783
Total	290	5,492	5,418	323	5,765	6,649	235	4,070	4,247	848	15,327	16,314

There were, in addition, several special service officers attached, at the request of the colonial Governments, to the British forces; these officers served with the Imperial troops with a view to aiding the development of the Commonwealth forces, particularly in regard to the routine and administration of troops on service.

The Home Government also accepted the offer of contingents from Australia on the outbreak of the Boxer rebellion in China. Naval volunteers were furnished by New South Wales and Victoria, and South Australia equipped a gunboat for the Imperial service. The strength of the New South Wales contingent was 260, and that of the Victorian 200, of all ranks.

## § 9. University Course in Military Science.

Following upon the endowment by the Sydney University of a Chair of Military Science, a curriculum, to extend over a period of three years, commenced in March, 1907. Completion of the course entitles the student to a diploma in military science, and students not completing it receive certificates for any courses in which they have given satisfaction.

The courses for the first year are Military History and Science I. and Military Engineering. In the former subject ten lectures are given in military history and ten in strategy, and in the latter there are ten lectures with five days' practical instruction. In the second year the subjects are Military History and Science II. and Military Topography. The former comprises ten lectures in military history and ten in Imperial defence. In topography ten lectures and seven days' practical instruction make up the course. The subjects for the third year are Military History and Science III. and Military Law and Administration. Ten lectures in military history are joined with ten in tactics to make up the former, while there are ten lectures in the latter course.

The lectures for diploma are given at the Sydney University during Lent and Trinity terms. Short continuous courses of instruction in military subjects for the benefit of officers of the permanent and citizen forces are also arranged, the lectures being delivered during Michaelmas term.

## § 10. The Defence Forces of New Zealand.

The natives of New Zealand have generally shewn themselves well disposed to the British colonists, but in 1845-8 and 1860-70 there were native wars. In these, many of the tribes fought for the Colonial Government. Colonists joined with the Imperial troops in the campaign that began in 1845. In October, 1847, a detachment of Imperial soldiers arrived, under an agreement to perform garrison duty for a few days each year for seven years, and to be constantly in readiness for military service if required, in return for which each soldier received an acre of land with a cottage thereon. The New Zealand Fencibles were also constituted during the first Maori war. In 1860 volunteer forces were raised to fight with the Imperial troops. Military settlers were also enrolled in Australia and other places for service in New Zealand. During the war the Imperial troops were withdrawn, the Colonial Government undertaking its own defence. After the conclusion of the war, part of the field force was organised into a permanent artillery unit. The defences of the Dominion are now constituted under Acts of 1886, 1900, 1906, 1907, and 1909. In 1882 the strength of the forces maintained was 7367—made up of 732 cavalry, 907 artillery, 380 engineers, and 5348 infantry. The colony furnished 150 (approximately) officers and 4850 men for the South African war.

The New Zealand defence forces consist of the Permanent and the Territorial bodies. The former comprise the Staff Corps (Officers), the Permanent Staff (warrant and non-commissioned officers), and the Royal New Zealand Artillery (field and garrison). The Territorial forces are: Mounted Rifles (twelve regiments); Field Artillery (eight batteries); Garrison Artillery (nine companies); Engineers (four companies); Infantry (sixteen regiments); Signal Corps (eight companies); Army Service Corps; Medical Corps (eight field ambulances); Veterinary Corps; Rifle Clubs; and Senior Cadets. The permanent forces are at all times liable for foreign service; the territorial forces only for home service; the senior cadets are not liable for active service.

For the purpose of decentralisation the Dominion is divided into four military districts, these are further subdivided into area-groups and areas.

Liability for service is enacted in the Defence Act and regulations. These provide for the gradual military training of every male from the age of 12 to the age of 25, after which service in the Reserve up to the age of 30 is required. There are no distinctions and no exceptions, except physical unfitness. Persons with conscientious objections to fighting are to serve in non-combatant branches.

As junior cadets, from 12 to 14, all boys undergo a course of elementary military training (chiefly physical) under the Education Department. At 14 they are transferred to the senior cadets, remaining in that division till 18, and performing regular military work, though not liable for active service. At 18 active service in the regiments begins, and continues to the commencement of the reservist period, which extends from 25 to 30, during which time active service in the regiments may be demanded in case of war or other national emergency. A secondary reserve to complete the ranks of the territorial force, after its own reserve has been used up, is furnished by the rifle clubs. Registration of senior cadets is compulsory at the age of 14.

The numbers of territorials and senior cadets registered up to August, 1911, for military training and not then posted to units, together with those already serving, are shewn in the following table:—

Territorials, now serving (under 21 years)	...	...	...	6,309
Registered for enrolment	...	...	...	22,016
Senior Cadets (including those serving)	...	...	...	30,164
Total	...	...	...	58,489
Members of territorial force over age desirous of continuing service	...	...	...	<u>2,862</u>

The training is strictly territorial and carried out (except camp training) within reach of home, and at convenient times. A minimum is laid down, and includes seven days' camp, a prescribed course of musketry and gunnery, and field training.

The establishment of the territorial force is 30,000. It is organised in field and coast defence units, and is to be fully armed and equipped according to the most modern standards. The members are uniformed by the State, and paid and rationed during the annual camp. The training is in the hands of regimental officers, assisted by the officers, and warrant and non-commissioned officers of the permanent forces. Officers are drawn from the ranks on the recommendation of commanding officers, and are appointed, promoted, and retired in accordance with definite regulations calculated to insure their efficiency and status.

The senior cadets are instructed in companies of infantry. In the appointment of officers, and for general disciplinary purposes, the military authorities co-operate with headmasters and the heads of other recognised organisations.

Members of the Reserve are borne on the reserve lists of their late unit, and parade for two half-days annually with some part of that unit. The secondary reserve (members of rifle clubs) carry out each year a prescribed course of musketry.

The New Zealand Staff Corps will ultimately consist of officers who have been trained as cadets in the Royal Australian Military College at Duntroon. Ten of such cadets are to be nominated annually.

Arrangements have been made with the Imperial Army Council for the selection (on interchange) of officers required to fill vacancies in the Staff Corps.

Administration and control is in the hands of the Council of Defence. The following table gives the strength of the various corps on 31st December, 1910:—

#### STRENGTH OF NEW ZEALAND DEFENCE FORCES, 31st DECEMBER, 1910.

HEADQUARTERS AND DISTRICT		Mounted Rifles	...	...	4,817
STAFFS	70	Infantry	...	...	6,384
PERMANENT—		Field Ambulance Corps	...	...	260
Royal N.Z. Artillery (including		Garrison Bands	...	...	143
Electric Light sections)	258	Battalion Bands	...	...	372
VOLUNTEERS—					
Field Artillery	510	Grand total trained	...	...	14,175
Garrison Artillery Division	1,011				
Engineers	350				

In addition there are the following:—Unattached officers, 250; reserves, 246; medical staff, 161; veterinary staff, 19; defence cadets, 5097; and rifle club members, 3750. The grand total of the defence forces is therefore 23,698.

The following table gives the military expenditure of New Zealand from 1905-6 to 1910-11:—

#### MILITARY EXPENDITURE, NEW ZEALAND, 1905-6 to 1910-11.

Year	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
Expenditure	£156,555	£151,431	£174,670	£193,976	£188,950	£212,280

In addition, the expenditure on naval defence was £100,000 in 1909-10 and 1910-11; and £40,000 in previous years.



## SECTION XXIX.

## PAPUA (BRITISH NEW GUINEA).

## § 1. New Guinea.

1. **Geographical Situation of New Guinea.**—New Guinea, frequently described as the largest island in the world, lies to the north-east of Australia, between  $0^{\circ} 25'$  and  $10^{\circ} 40'$  S. latitudes, and between  $130^{\circ} 50'$  and  $150^{\circ} 35'$  E. longitudes. Its estimated area exceeds 800,000 square miles, the greatest length being 1490 miles and the greatest breadth 480 miles.

2. **Discovery.**—The island was probably sighted by Abreus in A.D. 1511. The first visit by Europeans was apparently either that by the Portuguese Don Jorge de Meneses on his way from Goa to Ternate in 1526, or that by the Spaniard Alvaro de Saavedra in 1528. In 1606 Torres, having parted company with De Quiros at the New Hebrides, sailed, on his way to the Philippines, through the strait which separates the island from Australia, and which now bears his name.

3. **Colonisation.**—Little progress was made for many years in exploration and settlement. First the Portuguese, and afterwards the Dutch, who to a great extent replaced them as the principal European traders in the East, seem to have jealously excluded other traders and adventurers, and to have kept the knowledge of their discoveries to themselves. The coasts were visited by Roda, Schouten, Lemaire, Tasman, Dampier, Torres, Bougainville, and Cook; but the difficulties of navigation, the savagery of the islanders, and the tempting fields for enterprise in the more temperate regions further south, diverted the energy of traders and voyagers. Forrest describes a voyage by himself in 1774. In 1793, New Guinea was annexed by two commanders in the East India Company's service. Since that date the Dutch have made extensive surveys of the western portion, and the British and Germans have occupied and colonised the eastern.

4. **Partition.**—These three powers have agreed to the partition of New Guinea, each having suzerainty over islands adjoining its own territory. The whole of the portion west of the 141st degree of longitude, comprising about 150,000 square miles, or nearly half the island, belongs to the Dutch. The eastern half is divided in almost equal portions between Great Britain and Germany, the area possessed by each (with adjacent islands) being about 90,000 square miles. An Anglo-German boundary commission, appointed for the purpose of defining the boundary between the territories of the two nations, started operations on 26th December, 1908, and completed the field-work on 27th October, 1909. The total length of boundary delimited was  $66\frac{1}{2}$  miles. The work was both important and difficult. For a considerable portion of the survey, the country was exceedingly rough and mountainous, and the natives hostile. In one instance, the line was carried over a range at an elevation of 11,110 feet. The Dutch colony forms part of the residency of Ternate in the Moluccas, and has not been extensively developed. The German protectorate, where considerable commercial development has taken place, includes the northern part of the eastern half of the mainland, known as Kaiser Wilhelm's Land, and the large islands of the Bismarck Archipelago and the Solomon Group, as well as nearly 200 smaller islands. The south-eastern portion of New Guinea, nearest Australia, is British, and a dependency of the Commonwealth of Australia.

## § 2. The Australian Dependency of Papua.

**1. Australian Dependency of Papua.**—Surveys of the east coast of New Guinea by Stanley, Yule, Blackwood, Moresby, and others, brought home to Queensland, and to Australia generally, the danger to her commerce which would result from foreign possession of the islands and coasts opposite to Cape York, and from the holding by a hostile power of the entrance to the splendid waterway inside the Barrier Reef. The mainland opposite the shores of Queensland east of the 141st meridian was therefore annexed by that colony in 1883; but the action was disallowed by the British Government. In 1884, however, a British protectorate was authoritatively proclaimed by Commodore Erskine over the region lying east from the 141st meridian as far as East Cape, with the adjacent islands as far as Kosman Island. In the year following an agreement with Germany fixed the boundaries between the possessions of the two countries, and to Great Britain was assigned the portion now known as Papua, lying between the extreme limits of 5° and 12° S., and 141° and 155° E. The British protectorate was subsidised by Queensland, New South Wales, and Victoria, and lasted till 4th. September, 1888, when it was proclaimed a possession of the Empire. Its constitution was then that of a Crown colony, in association, however, with Queensland. Administration was in the hands of a Lieutenant-Governor, aided by an executive and a legislative council, and advised by a native regulation board. Port Moresby, on the south coast, was made the headquarters of the official establishment; a supreme court was established there, and magisterial courts in the districts; and an armed native constabulary force, numbering 235 on 30th June, 1911, under a European officer, was instituted for the maintenance of order. There were also, on the same date, 466 native village constables employed by the Crown.

**2. Annexation by Commonwealth.**—The territory was placed under the authority of the Commonwealth on 1st September, 1906, by proclamation issued in pursuance of Letters Patent of the 18th March, 1902, and was accepted by the Commonwealth by the Papua Act 1905, which came into force by virtue of the proclamation aforesaid. The transfer was made under the authority of section 122 of the Constitution (see p. 32 hereinbefore). The territory is now under the administration of the Commonwealth, but not included within it, and is divided into eleven magisterial districts.

**3. Physical Characteristics.**—Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Sudest and Rossel Islands, lies between 11° S. and 12° S. latitude. It is separated from Australia by Torres Straits. The length of Papua from east to west is upwards of 800 miles; towards either end the breadth from north to south is about 200 miles, but about the centre it is considerably narrower. The territory comprises also the islands of the Trobriand, Woodlark, D'Entrecasteaux, and Louisiade groups. The length of coast-line is computed at 3664 miles—1728 on the mainland and 1936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland and 2754 on the islands. From the eastern end of the territory rises a chain of mountains, which forms a great central ridge and attains its greatest altitude, as it extends westwards, in the Owen Stanley Range, the highest points of which are Mount Victoria (13,200 feet), Mount Scratchley, the Wharton Range, and Mount Albert Edward. The western end of the possession is for nearly 300 miles generally low and swampy for some distance along the coast. The whole territory is well watered. The great mountains and a great portion of the lower country are covered with forest. The islands are mountainous, and, with the exception of the low coral islands of the Trobriand Group, part of Murua, and a few others of small dimensions, principally of volcanic formation. The highest is Goodenough Island, 8000 feet. The largest rivers of the mainland flow into the Gulf of Papua. The Fly River, with its tributaries, drains an extensive area of the territory of the Netherlands, as well as the British. Its length in British territory is about 620 miles, and it is navigable by a steam launch for over 500 miles. Other important rivers are the Turama and the Purari. There are many excellent harbours.

### § 3. Population.

The total white population of Papua on 30th June, 1911, was 1032, made up of 771 adult males and 173 adult females (adults being persons over 16 years of age), and 40 male and 48 female children. The following table gives the population of Papua for the last five years:—

#### WHITE POPULATION OF PAPUA, 1907 to 1911.

YEAR ENDED 30TH JUNE.

1907.	1908.	1909.	1910.	1911.
690	711	702	879	1,032

The chief occupations of whites are:—Government officials and employees, 120; planters (including managers and assistants), 139; and miners, 144.

It is not possible to make a reliable estimate of the number of natives, owing to the fact that much of the interior country is unexplored. It is generally assumed to be somewhere between 400,000 and 500,000. These speak many languages and dialects. The coloured population, other than Papuans, numbered on 30th June, 1911, 450. On the same date, half-castes, including Papuan half-castes, totalled 230. An Immigration Restriction Ordinance prohibits the immigration into the territory of persons who fail to pass the dictation test, or who are persons of bad character, or likely to become a charge upon the public. Exemptions may, however, be granted by the Lieutenant-Governor to persons of special skill whom it is desired to employ as overseers or foremen.

### § 4. Native Labour.

The rights of both employer and labourer are conserved by the Native Labour Ordinances. Service on the part of the native is voluntary, and he must be justly treated, and properly housed and fed. Employers may recruit personally, or obtain their natives through a licensed recruiter. Contracts of service must be in writing, entered into before a magistrate or other qualified officer, and the natives must be returned to their homes on completion of engagement. During the period of service the recruiter or employer is personally responsible for the native's welfare. Refusal to work after engagement, or desertion from service, renders the labourer liable to imprisonment. On the other hand, a magistrate may terminate an engagement where unjust or harsh treatment by the employer is proved. The term of indenture must never exceed three years, and in the case of miners and carriers eighteen months is the limit, but re-engagements may be made. The magistrate must satisfy himself that the remuneration is fair, that the native is willing to undertake the service, and that there is no probability of unfair treatment or detention. Wages must be paid in the presence of an officer. A medicine chest, stocked with necessary drugs and first aid instruments, must be kept by all employers.

Just treatment, good food, and satisfactory remuneration for his labour has made the Papuan savage an excellent servant. With considerable natural aptitude and intelligence, he is able to understand readily what is required by his employer; consequently native labour is very largely engaged by the Administration for the construction of roads and public works, and by the private employer for the clearing and upkeep of plantations. In some districts, however, the natives manifest a marked unwillingness to work.

The number engaged under contract of service during the year ended 30th June, 1911, was 7806. In addition, there were about 1000 persons employed who were not under contract of service. The available labour supply is inadequate for the development of the territory, and importation of Javanese coolies has been suggested.

## § 5. Production.

1. **Papuan Products.**—The products of the territory are obtained from its agricultural, forestal, fishing, mining, and manufacturing industries. There is a Papuan Court at the Imperial Institute, London, where, beside maps, handbooks and reports, a representative collection of products is shewn, additions being made to the exhibits from time to time. The industries of Papua are not numerous, but they are becoming more diversified. In many cases, some years must lapse before the raw material is available for commerce.

2. **Agriculture.**—(i.) *Soil and Rainfall.* The physical features of Papua are favourable to agriculture. Rich soils at varying elevations, and heavy and evenly-distributed rainfall, have ensured success in cultivating almost every tropical product of value. The territory comprises immense areas of rich alluvial and volcanic soils along the coast, and equally fertile land at elevations up to 6000 feet. Splendid rainfalls are recorded, except over a belt of country which runs back from the coast to the hills, and which has its dry season from May to November. This “dry” area is admirably suited for the production of tobacco, fibres, cotton, etc. There are fifteen meteorological stations throughout the territory. An economic museum and agricultural library have been established. By anticipating and removing many of the pioneering difficulties the Government has made the task of the colonist an easy one. The feature of the year 1910-11 was the marked cessation of speculative acquisitions of land, and the steady investment of capital in the development of large areas already acquired. One of the principal difficulties of planters is the heavy growth of weeds, and the Government has undertaken experiments with the planting of grasses to take the place of weeds, and so keep down the gross rank vegetation.

(ii.) *Plantations.* On 31st March, 1911, there were 167 plantations. Agricultural settlement has been mostly in the Central and Eastern Divisions, though plantations are rapidly spreading in other districts, particularly the South-Eastern and Western. The total area planted was 15,881 acres, or an average of 95 acres for each plantation. There are also about 3000 acres cleared ready for planting. The principal plantation industries entered upon up to the present are cocoanuts, rubber, sisal hemp, and coffee. Secondary agricultural industries are the cultivation of bowstring hemp, cotton, vanilla, kapok, cocoa, tapioca, cinnamon, tea, and tobacco. The following table shews the areas under the different cultures (exclusive of maize and garden products) on 31st March, 1911:—

							Acres.
Cocoanuts	...	...	...	...	...	...	9,513
Rubber	...	...	...	...	...	...	2,889
Sisal hemp	...	...	...	...	...	...	2,332
Coffee	...	...	...	...	...	...	132
Other cultures	...	...	...	...	...	...	1,015
Total	...	...	...	...	...	...	15,881

(iii.) *Government and Native Plantations.* There are six Government plantations of cocoanuts and Pará rubber, with a total area of 229 acres. The natives are compelled by an ordinance to plant cocoanuts for food supply. It is estimated that the total area so planted amounts to 350,000 acres. New Government plantations are contemplated.

(iv.) *Government Nurseries and Experimental Stations.* Sylvicultural nurseries have been established with the object of supplying settlers with seeds and plants, which

have been imported from the East and West Indies, Central America, tropical Australia, Ceylon, the Malay States, and the Solomon Islands. Attached to the nurseries are experimental stations, where the suitability of soil and climate for the different products are tested and correct methods of cultivation demonstrated. Four nurseries have been established, the total area being about 190 acres. From these, more than 102,000 Pará rubber trees and seeds, 417,000 sisal hemp plants, 600 bowstring hemp plants, as well as various other plants have been distributed to planters. A Government orchard, for supplying fresh fruit and vegetables, has been established at one of the experimental stations, and yields considerable quantities of European fruit-foods. It is intended to discontinue one of the nurseries, its functions being adequately carried out elsewhere.

(v.) *Indigenous Products.* There are many indigenous plants of great economic value. These comprise sandalwood and other timber trees, sugar-cane, cotton plants, rubber-both, vine, nutmegs, ginger, bamboos, palms, bananas, bread-fruit, edible nuts, sago-palms, fruits, and vegetables.

3. **Live Stock.**—On 31st March, 1911, the live stock in the territory consisted of 339 horses, 5 donkeys, 1149 head of cattle, 116 mules, 177 sheep, 619 goats, 30 pigs, and 6341 fowls. A Government stud farm has been established for the breeding of horses. In April, 1910, twenty-two stud mares, many of them in foal, were imported from Queensland, and further importations are contemplated in 1911-12. An Arab stallion of good breeding is a valuable asset to the stud. The introduction of rabbits, foxes, hares, and monkeys is prohibited.

4. **Forest Products.**—There is a large variety of useful timbers in Papua. Of 120 varieties that have been catalogued, 16 are adapted to resisting heavy strains, and are suitable for girders, railway waggons, etc.; 10 for railway carriage and coach building; 15 for joinery, lining, flooring, etc.; 14 for butter boxes; 5 for boat building; 4 for piles; and 15 for cabinet work. Sandalwood is indigenous. It is largely used for cabinet work, and santal oil is distilled from its roots. Ebony is also produced for export. Rubber is a promising industry. There are considerable areas of native rubber (*Ficus Rigo*), but the planters generally prefer the imported Pará rubber. Guttapercha is obtained from species of *palaquium*, which grow on the hills. Drugs, dyewoods, and spices are also obtained from indigenous plants. Three saw mills have been established, but the output has not been sufficient to supply the local demand for building and other timber, and large quantities of sawn timber have been imported from Australia. About 400,000 superficial feet of log timber were exported to Australia in 1910-11, an increase over the previous year of 342,000 sup. feet. Contracts have also been made by residents to ship timber to Great Britain.

5. **Fisheries.**—Pearl-shell fishing occupies an important place in the industries of Papua. A considerable number of luggers is licensed, but the returns are mostly credited to Queensland, whose boundary approaches to within a few miles of the Papuan coast. The species of tortoise which supplies the commercial tortoise-shell is also a native of the territory. Bêche-de-mer is found along the shores and reefs. There is a dugong fishery on the coast of the Western Division.

6. **Mining.**—(i.) *Variety of Minerals.* Minerals have been discovered in many places, and over an extremely wide range. Those discovered so far are—gold, copper, silver, tin, lead, zinc, cinnabar, iron, osmiridium, gypsum, manganese, sulphur, and graphite. Of precious stones, only the topaz and beryl have been obtained. Large beds of apparently good coal also exist. The discovery of petroleum is reported. The value of the mineral output in 1910-11 was larger than that of any of the four preceding years. A geologist was added to the Government service at the beginning of the year 1911.

(ii.) *Gold.* In 1878 gold, the existence of which in the territory had long been known, was unsuccessfully sought by a party of Australian miners. Ten years later the first field was discovered. The search has now spread over every division, and finds have been recorded wherever the explorers have gone. There are 144 white miners and 911 indentured labourers in Papua; the majority of the whites are working the Murna gold-field. The quantity and value of the gold yield for five years are given below:—

#### GOLD YIELD, PAPUA, 1906-7 to 1910-11.

1906-7.		1907-8.		1908-9.		1909-10.		1910-11.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
ozs.	£	ozs.	£	ozs.	£	ozs.	£	ozs.	£
16,103	58,886	14,557	51,024	14,710	51,108	16,151	60,181	18,497	68,803

Most of the rivers, with the exception of those flowing into the Gulf of Papua, have been declared open to gold-dredging, and good yields have been obtained from many of the rivers thus dredged.

The Gold-buyers Ordinance (Ordinance XVIII. of 1909) provides for the issue of licenses to buy gold, and imposes a penalty in respect to the purchase of gold by unauthorised persons. The total quantity of gold won to 30th June, 1911, was 322,537 ounces, valued at £1,166,947.

(iii.) *Copper.* A rich and extensive copper field has been proclaimed, and about 30 square miles of it are being worked. There are indications that the mineral exists over a much wider region. The ore shipments in 1910-11 were the largest since the field was discovered. The total amount shipped to date is 855 tons, valued at £13,772.

(iv.) *Other Minerals.* Some good samples of galena (sulphide of lead) have been obtained. Small quantities of cinnabar (sulphide of mercury), graphite (or plumbago), osmiridium (or iridosmine), zinc, native sulphur and other minerals are also found.

A mineral laboratory and museum has been fitted up, and is available to prospectors and others interested.

7. **Manufactures.**—The chief native manufactures are pottery, canoes, fishing nets, mats, shell ornaments, stone implements, and decorated gourds.

### § 6. Statistical Summary.

1. **Revenue and Expenditure.**—The revenue and expenditure for 1910-11, under principal heads, are given below; also a summary covering a period of five years. In addition to the revenue collected during the year, amounting to £45,972, £30,000 was granted by the Commonwealth Government—£25,000 for ordinary expenditure, and £5000 for Government plantations; £2483 was brought forward from the previous year, being the unexpended balance. There was, therefore, £78,455 available for expenditure; of this £70,699 was expended. As compared with 1909-10, the principal increases in receipts were:—Customs receipts, £7653; postal receipts, £2255; mining receipts, £456; and sale of allotments, £1054. The chief item of decrease was sale of Government property, £952. On the expenditure side, large increases occurred in three departments, viz., Government Secretary's Department, £3903; Treasury and Postal Department, £2320; magistrates, £4281.

## REVENUE OF PAPUA, 1910-11.

## EXPENDITURE OF PAPUA, 1910-11.

Customs receipts ... ..	£32,554	Lieutenant-Governor and Civil list	£2,357
Postal receipts ... ..	4,484	Government Secretary's Dept.	6,233
Judicial fines and fees ... ..	464	Treasury & Postal Department	6,702
Land leases ... ..	713	Magistrates ... ..	10,999
Liquor licenses ... ..	309	Armed Native Constabulary ... ..	6,120
Native labour fees ... ..	1,213	Gaols ... ..	2,742
Sanitary fees ... ..	140	Lands Department ... ..	1,576
Timber licenses ... ..	51	Public Works Department ... ..	11,134
Fishing licenses ... ..	55	Medical ... ..	5,768
Rubber collecting licenses ... ..	25	<i>Merrie England</i> ... ..	7,137
Sale of drugs ... ..	4	Survey Department ... ..	3,323
Sale of Government property ... ..	384	Department of Agriculture ... ..	2,578
Native hospital fees ... ..	633	Department of Native Affairs ... ..	1,371
Sale of plants and seeds ... ..	114	Central Court ... ..	1,092
Mining receipts ... ..	1,333	Legislative Council ... ..	112
Trading stations ... ..	82	Government Stores ... ..	1,455
Proceeds sale of water ... ..	9		
Receipts from Curator of Intestate Estates ... ..	6		
Government slip dues, and services of carpenters ... ..	82		
<i>Merrie England</i> refunds and earnings ... ..	274		
Printing office fees ... ..	35		
Prison receipts ... ..	137		
Pearl buyers' licenses ... ..	326		
Interest from trust funds ... ..	105		
Sale of forfeited allotments ... ..	10		
Appropriation of former years ... ..	501		
Money order commission ... ..	55		
Stamp duties ... ..	281		
Arms permits ... ..	76		
Land deposits forfeited ... ..	11		
Sale of allotments ... ..	1,054		
Succession and Probate Duty ... ..	47		
Telephone service receipts ... ..	32		
Timber royalties ... ..	57		
Fines <i>re</i> improvements, township allotments ... ..	20		
Miscellaneous receipts ... ..	296		
Total ... ..	*£45,972	Total ... ..	*£70,699

\* The figures in this table do not, in all cases, agree with those shown on page 805 hereinbefore. Those on this page were taken from the "Report on Papua," while those on page 805 were obtained from the "Commonwealth Auditor-General's Report."

## REVENUE AND EXPENDITURE OF PAPUA, 1906-7 to 1910-11.\*

Item.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
	£	£	£	£	£
Revenue ... ..	21,813	26,019	27,706	34,822	45,972
Expenditure ... ..	45,335	48,525	51,824	64,874	70,699

\* See note to preceding table.

2. Imports and Exports.—The value of imports and exports for five years is shown in the table below. The figures for 1907-8 and 1908-9 evidenced considerable expansion in trade over former years. Those for 1909-10 showed an advance over 1908-9 of £25,497 in imports, and £20,907 in exports. In 1910-11 imports increased nearly 70 per cent. over the previous year, exports nearly 17 per cent.

## VALUE OF IMPORTS AND EXPORTS OF PAPUA, 1906-7 to 1910-11.

Particulars.					1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
					£	£	£	£	£
Imports	...	...	...	...	87,776	94,061	94,680	120,177	202,910
Exports	...	...	...	...	63,756	80,616	79,692	100,599	117,410
Total trade	...	...	...	...	151,532	174,677	174,372	220,776	320,320

The principal articles of import are foodstuffs, which in 1910-11 reached a total value of £57,740. The chief other imports in that year were:—Drapery and clothing, £29,060; hardware and ironmongery, £13,818; building material, £12,433; tobacco and cigars, £11,445; machinery, £8516; wine, spirits, and beers, £6685; live stock, £5516; oils and kerosene, £3869; and boats and launches, £3866. The most notable increases over the previous year are:—Foodstuffs, about £22,000; and drapery and clothing, about £15,000. In each of the five years under review gold has formed considerably more than half the value of the total export. In 1910-11 the value of this metal exported reached £62,112. Other principal exports were:—Copra, £17,837; copper ore, £12,386; bêche-de-mer, pearls, pearl and turtle shell, £9046; rubber, £2054; timber, £681; sandalwood, £190.

3. **Postal and Shipping.**—Considerable development has been shewn in means of communication—the postal returns, and the tonnage of vessels entered and cleared at ports, having largely increased. Particulars regarding postal matter are given hereunder:

## POSTAL STATISTICS OF PAPUA, 1906-7 to 1910-11.

Year.	Letters.		Packets.		Newspapers.	
	Received.	Despatched.	Received.	Despatched.	Received.	Despatched.
1906-7	49,541	41,036	7,487	2,581	38,374	12,846
1907-8	53,118	47,521	6,655	3,137	44,052	12,674
1908-9	57,055	51,259	8,608	3,997	48,070	14,320
1909-10	64,357	56,776	8,893	5,575	52,178	21,104
1910-11	84,274	83,617	13,712	8,011	63,170	25,520

In 1907-8 there were 1370 parcels received and 501 despatched; in 1908-9, 1566 were received and 467 despatched; in 1909-10, 1351 were received and 379 despatched; and in 1910-11, 2279 were received and 542 despatched.

The following table shews the number, tonnage, and nationality of vessels entered and cleared at ports during the years 1906-7 to 1910-11:—

## SHIPPING.—FOREIGN-GOING VESSELS ENTERED AND CLEARED AT PORTS OF PAPUA, 1906-7 to 1910-11.

Nationality.	Vessels.									
	Number.					Tonnage.				
	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
British...	217	243	233	234	1,232	106,561	127,108	119,252	123,402	170,583
German	16	20	18	18	55	52,616	56,664	50,574	62,976	129,661
Dutch	...	...	18	24	...	...	...	54,396	69,908	...
Total...	233	263	269	276	1,287	159,177	183,772	224,222	256,286	300,244



## § 7. Land Tenure.

1. **Method of Obtaining Land.**—(i.) *The Land Laws.* The broad principles upon which the land laws of Papua are based are:—(a) No land can be alienated in fee simple; (b) the rental of the land leased is assessed on the unimproved value of the land, and is subject to reassessment at fixed periods.

(ii.) *Agricultural Lands (Class A).* The terms upon which the land may be leased are exceedingly easy to the settler. He can obtain a leasehold of the best class of agricultural land for any period up to ninety-nine years on the following conditions:—

- (a) Upon making application a small deposit fee, ranging from £1 for 100 acres or less, to £5 for 1000 acres, and £5 for every additional 1000 acres or portion thereof, is payable. This is returned to the applicant when, having accepted the lease, he has cultivated a portion of the land.
- (b) No survey fees are charged to the lessee, and no fee is charged for the preparation or registration of the lease.
- (c) If the lease is for not more than thirty years, rent shall be paid during the whole term at the rate of 5 per cent. per annum on the unimproved value of the land.
- (d) If the lease is for more than thirty years the rent payable is determined at 5 per cent. per annum of the unimproved value of the land, but no rent is payable for the first period of ten years.

The unimproved value of the land is to be appraised every twenty years during the currency of the lease, and the rent determined accordingly, but if on any appraisal the rent is raised by more than one-third, the lessee may disclaim the lease, and is thereupon entitled to receive compensation for his improvements.

The compulsory improvement conditions attached to agricultural leases are as follows:—

- (a) One-fifth must be properly planted with some approved plants within five years.
- (b) Two-fifths within ten years.
- (c) Three-fourths within twenty years.
- (d) During the remainder of the term three-fourths of the suitable land must be kept properly planted.

Provided always that, if at any time during the first five years of a lease it appears to the Land Board that reasonable efforts are not being made to fulfil the improvement conditions, they may recommend the Lieutenant-Governor to cancel the lease, and thereupon it shall be lawful for the Lieutenant-Governor, by notice in the *Gazette*, to cancel the lease accordingly.

All agricultural lands which have not been alienated by the Crown have been assessed under Section 13 of the Land Ordinance at an unimproved value of 5s. per acre. This appraisal definitely fixes all land rentals for agricultural lands for twenty years as follows:—First ten years, free; second ten years, 3d. per acre per annum.

The rental of agricultural leases for the whole term of ninety-nine years cannot exceed the following amounts, subject to the clause *re* voluntary forfeiture and compensation:—First twenty years—first ten years, *nil*, second ten years, 3d. per acre; second twenty years, 4d. per acre; third twenty years, 5½d.; fourth twenty years, 7½d.; balance of lease, 9½d.

The maximum area which may be granted in any agricultural lease is 5000 acres.

(iii.) *Pastoral Lands (Class B).* Pastoral land, suitable for cattle and horses, can be obtained in easily accessible positions. All these lands are well watered and clothed with blady kangaroo, crowsfoot, couch, scurvy, and other grasses. The carrying capabilities of this land are estimated at forty head of cattle to the square mile. Application, deposits, fees, etc., are similar to those for Class A.

The compulsory improvement conditions attached to pastoral leases are:—

- (a) Ten head of cattle, horses, asses, mules, or fifty head of sheep, per square mile, must be on the land within five years.
- (b) Within ten years these numbers must be increased to twenty head of cattle or 100 sheep or goats to the square mile.
- (c) The land must be kept stocked to this extent for the remainder of the lease.

Provision for forfeiture of lease is the same as in the case of agricultural lands.

The rentals of pastoral leases for the whole term of ninety-nine years cannot exceed the following amounts, subject to the clause *re* voluntary forfeiture and compensation:— First twenty years—first ten years, *nil*; second ten years, 1s. per 100 acres; second twenty years, 3s. 1½d. per 100 acres; and increasing by one-third for every succeeding twenty-year period. Pastoral lands must be “proclaimed” before leasing.

(iv.) *Residence Leases.* Leases of Crown lands not included in any town may be granted for residence purposes. The area is not to exceed five acres, with annual rent not less than 10s. per acre; improvements as prescribed are to be effected, and the land fenced.

(v.) *Special Leases.* Leases of Crown lands may be granted for the erection of quays, wharfs, storehouses, factories, etc. The area is not to exceed 25 acres, and the period of the lease is limited to 25 years. Conditions as to rent, royalties, and improvements are to be carried out as prescribed.

(vi.) *Sales of Leases.* Permission may be given to sell, by auction or by tender, leases other than agricultural and pastoral, for special reasons.

2. *Land Tenures.*—On 30th June, 1911, the lands of the territory were held as follows:—

	Acres.			
Area of land held by the natives	...	...	...	56,518,842
Area of Crown land	...	...	...	1,036,123
Area of freehold land	...	...	...	26,547
Area of leasehold land	...	...	...	364,088
Area of territory	...	...	...	<u>57,945,600</u>

Since the operation of the Papua Act, private sales of land in the territory have practically ceased. The Government buys from the natives, and then leases to planters, who are forbidden to have direct dealings in land with Papuans. The development in leasehold tenures may be seen from the following table:—

#### TOTAL AREA HELD UNDER LEASE, 1906-7 to 1910-11.

Year ended 30th June.	1907.	1908.	1909.	1910.	1911.
Land held under lease ... acres	48,002	242,395	337,803	363,425	364,088

In 1910-11, the area of leases granted was 33,073 acres; that of leases expired, revoked, and forfeited was 32,411 acres. Of the latter, over 21,000 acres comprised leases which were held for over two years, but upon which no substantial improvements had been effected. There has been steady development in agriculture through the adoption of stringent safeguards against purely speculative acquisitions of land.

The land acquired by the Crown from the natives during 1910-11 was as follows :—

					Acres.
Area purchased from the natives	...	...	...	...	29,236
Area declared waste and vacant	...	...	...	...	12,960
Total	...	...	...	...	42,196
Less waste and vacant areas cancelled	...	...	...	...	19,200
Net increase for the year	...	...	...	...	22,996

The total area surveyed in the Territory is 25,353 acres of freehold, and 84,247 acres of leasehold.

## § 8. Progress of the Territory.

1. **Statistical View of Four Years' Progress.**—As already stated (§ 2, *supra*) the territory was placed under Commonwealth control on 1st September, 1906. The following table indicates the progress that has been made since that date :—

### STATISTICAL VIEW OF FOUR YEARS' PROGRESS, 1907-11.

Subject.	Year ended 30th June.	
	1907.	1911.
White population	690	1,032
Native labourers employed (exclusive of Crown servants)	2,000	8,806
Number of white civil servants	65	120
Armed constabulary	185	235
Village constables	401	466
Territorial revenue	£ 21,813	45,972
Territorial expenditure	£ 45,335	70,699
Value of imports	£ 87,776	202,910
Value of exports	£ 63,756	117,410
Area under lease	acres 70,512	364,088
Tonnage of ocean-going vessels entered and cleared at ports	159,177	300,246
Area of plantations	acres 1,467	15,881
Meteorological stations established	3	15
Gold Yield	ounces 16,103	18,497
Copper ore shipped	tons 137	403
Live stock in territory—		
Horses	173	*339
Cattle	648	*1,149
Mules	40	*116
Timber shipped	sup. ft. ...	400,000

\* On 31st March, 1911.

## SECTION XXX.

## PUBLIC HYGIENE.

## § 1. Introduction.

1. **General.**—Though the safeguarding of the public health as an organised department of administration is of comparatively modern growth, few branches of law have expanded more rapidly than the law relating to public health. The loss of potential wealth incurred through preventable diseases and deaths is of grave concern to the nation, and is a matter which has recently received an increased amount of attention both from the Commonwealth and State Governments and from the Health and other authorities in Australia. Numerous Acts of Parliament have been passed dealing with various aspects of the subject of public hygiene.

2. **State Legislation.**—In the first place there is a number of statutes, passed by the State Legislatures, such as Public Health Acts, Pure Food Acts, and Milk and Dairy Supervision Acts, providing, *inter alia*, for the constitution of Central Health Authorities, vested with definite powers, and furnishing the machinery necessary to enforce these powers. The general effect of this legislation has been to place local sanitary regulations and the execution of the Acts in the hands of the local authorities, subject to a general superintendence by a Government department.

3. **Commonwealth Legislation.**—Secondly, by the enactment of the Commerce (Trade Descriptions) Act 1905, the Quarantine Act 1908, and the Customs Act 1910, the Commonwealth Government has taken the first steps towards the exercise of its constitutional powers for the protection of the public health. All these Acts are administered by the Department of Trade and Customs.

4. **Scope of Enquiry.**—In addition to the statutes already referred to, account should be taken of a large body of legislation which relates more or less indirectly to the subject of public hygiene. It deals with a great variety of subjects and matters, such as factories, conditions of employment, mines, merchant shipping, prevention of fire, buildings, dangerous performances, contagious diseases, and other matters. There is also a number of statutes which have been passed with the object of protecting and supervising infant life. Owing to exigencies of space it is not possible in this section to do more than give a brief description of the scope and results of the legislation relating to public hygiene in its more important aspects.

## § 2. The Public Health Acts.

1. **General.**—The most important statutes relating generally to the subject of public hygiene are the Health Acts which have been passed in each State. While the scope of these Acts differs considerably in some of the States, there is a general similarity in their chief provisions and range of operation. The administration of the Acts is carried on by either a Central Board or a Commissioner of Health under Ministerial control, while their actual execution is imposed on local Boards of Health or on the local authorities.

constituted under the various Local Government Acts. Ordinarily the Central authority has general supervisory powers over local Boards and authorities, and also has power to act in case of default by or in the absence of a local Board or authority as to any duty under the Act, and to recover all expenses incurred. The Central authority may also make regulations, and the central and local Boards may make by-laws for various purposes generally specified in the Health Acts. Generally it may be said that the chief functions of the Central Health authorities are:—(a) the collection and dissemination of useful information relating to health and the prevention of disease, and (b) to control, stimulate, and, where necessary, to supplement the efforts of the local authorities.

Inspectors are sent to make reports on the hygienic conditions of country towns or districts with a view to assisting the local authorities with advice, and keeping the central department posted as to the activity or otherwise of these various bodies.

Rating powers for sanitary purposes are conferred on local authorities by the Local Government Acts.

The general powers of local authorities under the Acts extend to a variety of subjects and matters, including:—sewers and drains, sanitary conveniences, scavenging, cleansing, privies and cesspools, abatement of nuisances generally, offensive trades, public buildings, dwelling-houses and lodging-houses, hospitals, mortuaries, cemeteries and burial grounds, prevention of adulteration of food and drugs, unsound food, pollution of water, supervision of abattoirs and dairies, prevention of infectious diseases, and infant life protection.

**2. New South Wales.**—The Department of Public Health consists of a Permanent Head, Board and Secretary, together with the various staffs—medical, chemical and clerical; in addition there are five sanitary inspectors working under the medical officers of health and the chief sanitary inspector. The business carried on by the Department embraces public health and the general medical work of the Government. The Board is nominee; it was created in 1881, incorporated in 1894, and is charged with the administration of the following Acts:—Public Health Act 1902, Public Health (Nightsoil Removal) Act 1902, Dairies' Supervision Act 1901, Noxious Trades Act 1902, Cattle Slaughtering and Diseased Animals and Meat Act 1902, Sydney Abattoirs, etc. Act 1902, Quarantine Act 1897, Pure Food Act 1908, and Private Hospitals Act 1908. The Board also possesses advisory powers under the Local Government Act 1906.

**3. Victoria.**—In this State the Public Health Acts are administered by a Board composed of two members nominated by the Governor-in-Council and of seven members elected by the municipal councils. The medical and sanitary staffs of the Board consist of (a) the medical inspector, who is also chairman, (b) two assistant medical inspectors, (c) five port health officers, (d) five engineering inspectors, (e) one sanitary inspector, and (f) nine food inspectors. The main function of the Board is to enforce the execution of the Health Acts by the local municipalities, but it has been found advisable to supplement this supervisory function by an active policy of inspections as to the sanitary condition of various districts and the sampling of articles of food. The supervision of the sanitary condition of the milk supply is under the Dairy Supervision Branch of the Department of Agriculture. Acts administered by the Department of Public Health are:—The Health Act 1890, the Cemeteries Act 1890, the Cremation Act 1903, the Adulteration of Wine Act 1905, the Meat Supervision Acts 1900 and 1909, and the Pure Food Act 1905.

**4. Queensland.**—In this State a Department of Public Health was organised in 1901 under the authority of the Health Act 1900. Prior to that time a central authority—the Board of Health—existed, but was without legal power, and the responsibility of sanitary administration was thrown upon the local authorities. The Act of 1900 consolidated and amended prior health legislation and provided for the appointment of a Commissioner of Public Health, charged, under the Home Secretary, with the administration of the Act. The chief functions of the central authority are to advise and stimulate the local authorities on matters pertaining to the Act, and also, where necessary,

to compel the remedying of sanitary evils produced by local inefficiency or apathy. The production and sale of milk and the manufacture, sale, and export of dairy produce, in their hygienic aspects, are controlled by the Department of Agriculture and Stock under the Dairy Produce Acts 1904, 1905, and 1910.

5. **South Australia.**—The Central Board of Health in South Australia consists of five members, three of whom (including the chairman) are appointed by the Governor, while one each is elected by the city and suburban local Boards and the country local Boards. The Health Act 1898 provides that the municipal and district councils are to act as local Boards of Health for their respective districts. There are 175 of these local Boards under the general control and supervision of the Central Board. A chief inspector periodically visits the local districts and sees generally that the Boards are carrying out their duties. There is also a chief inspector of food and drugs (under the Food and Drugs Act 1908), and a chief inspector of cattle, and there are nine other inspectors in outlying districts who are directly responsible to the Central Board.

6. **Western Australia.**—In this State the Health Act, 1911—which amended and consolidated the preceding Health Acts of 1898, 1900, 1902, 1904 and 1909—now operates as from 1st June of that year. By this Act the principal authority (under the Minister), the Commissioner of Public Health, who must be a duly qualified medical officer, possesses full power to act as he may deem necessary in relation to any matter concerning public health, and has authority to appoint persons to assist him in carrying out the provisions of the Act. Every municipal district becomes a health district within the meaning of the Act, and the municipal councils thereof become the local health authorities. Each local authority is bound to carry out, within its district, the provisions of the Act. Local Boards of Health must not exceed seven members, who are appointed by the Governor for a term of three years, and are eligible for reappointment. A majority of the members (who must appoint one of their number as chairman), shall form a quorum, and all matters are decided by a majority of the members present, the chairman, in cases of an equality of votes, having a casting one.

7. **Tasmania.**—In this State a Department of Public Health, under the control of a Chief Health Officer, was constituted by the Public Health Act 1903. The department has one inspector, but district health officers are not provided for. The number of local authorities under the Public Health Act has been reduced to fifty-one since the Local Government Act 1906 came into force. All parts of Tasmania are now furnished with the administrative machinery for local sanitary government.

### § 3. Inspection and Sale of Food and Drugs.

1. **Introduction.**—The importance of securing a pure and wholesome supply of food and drugs is recognised by both the Commonwealth and State Parliaments. Under the Acts referred to later, and the regulations made thereunder, the importation of articles used for food or drink, of medicines, and of other goods enumerated, is prohibited, as also is the export of certain specified articles, unless there is applied to the goods a "trade description" in accordance with the Act. Provision is made for the inspection of all prescribed goods which are imported, or which are entered for export.

(i.) *Commonwealth Jurisdiction.* Under Section 51 (i.) of the Commonwealth Constitution Act 1900, the Commonwealth Parliament has power to make laws with respect to trade and commerce with other countries and among the States. By virtue of that power, the Commerce (Trade Descriptions) Act, 1905, and the Customs Act, 1910, to which reference has already been made in another part of this book (see pp. 599-600), were passed.

(ii.) *State Jurisdiction.* The inspection and sale of food and drugs is also dealt with in each State either under the Health Acts or under Pure Food Acts. There is, in addition, in the several States, a number of Acts dealing with special matters, such as the adulteration of wine and the supervision of meat. The sanitary condition of the milk supply is also subject to special regulations or to the provisions of special Acts; this subject is more particularly referred to in the next succeeding sub-section hereof.

(a) *General Objects of Acts.* The general objects of the Acts dealing with the inspection and sale of food and drugs are to secure the wholesomeness, cleanliness, and freedom from contamination or adulteration of any food, drug, or article, and for securing the cleanliness of receptacles, places, and vehicles used for their manufacture, storage, or carriage. The sale of any article of food or any drug which is adulterated or falsely described is prohibited, as also are the mixing or selling of food or drugs so as to be injurious to health.

(b) *Inspection and Analysis.* Power is given to any authorised officer to enter any place for the purpose of inspecting any article intended to be used as a food or drug and also to inspect articles being conveyed through the streets, by water or by rail. He may take samples for examination or analysis, and may seize for destruction articles which are injurious to health or unwholesome. Chemical analyses and bacteriological examinations are made by qualified officers. Special provision is generally made in the Acts with regard to the sale of preservatives and disinfectants.

(c) *Advisory Committees.* In New South Wales, Victoria, and South Australia Advisory Committees have been appointed for the purpose of prescribing food standards and for making recommendations generally with a view to carrying out the provisions of the Acts. The duty of enforcing these regulations is entrusted to the local authorities, but it is stated that up to the present comparatively few of the local councils seem to have realised the importance of guarding the food supplies of the people.

2. **New South Wales.**—Provisions as to the sale of food and drugs in New South Wales are contained in the Pure Food Act 1908 and in the regulations made thereunder. The administration and enforcement of these provisions are primarily duties of the Board of Health, but may, by direction of the Governor, be left to local authorities. Analyses are made by the Department of Public Health free of charge.

(i.) *Special Provisions.* The Act contains a number of special provisions. Drugs must comply with tests specified in the British Pharmacopœia, and packages of food must be labelled with description, weight, or measure of their contents. The advertising or sale of any injurious or useless food, drug, or appliance may be prohibited, as also may the sale of any substance as a disinfectant or preservative. A person selling prohibited articles may not be liable to penalties under the Act if he prove that he purchased such articles with a guarantee in writing that they were not adulterated or falsely described, that he had no reason to believe that the same were adulterated or falsely described, and that he sold them in the same state as when he purchased them. The person giving the guarantee must be a resident in New South Wales, or, if a company, must have a registered office in New South Wales. The Board of Health may require the council of any local authority to submit for analysis during each year not less than three samples of foods or drugs for each thousand persons of the population of its area.

(ii.) *The Advisory Committee.* The Pure Food Act 1908 provides for the constitution of an Advisory Committee on whose recommendation the Board of Public Health may make regulations prescribing food standards, prohibiting the manufacture or sale of food, or the use of appliances containing any specified substances, and for generally carrying out the purposes of the Act.

3. **Victoria.**—In this State the prevention of the adulteration of food and of the sale of unwholesome food are provided for by the Health Act 1890, as amended by the Adulteration of Wine Act 1900 and the Pure Food Act 1905 and regulations made thereunder. While differing considerably in detail, the general provisions of these Acts are in many respects similar to those of the New South Wales Act of 1908. The Meat Supervision Acts 1900 and 1909 specially deal with the supervision of the slaughtering of animals and the sale of meat in Victoria. The Pure Food Act provides, *inter alia*, for the establishment of a specially qualified Foods Standard Committee charged with the functions of formulating standards of purity, quality, and composition for articles of food and drugs. Various regulations as to both food and drugs have been made by this Committee. The Act requires explicit labelling of packages, and provides for the punishment, where possible, of the actual adulterator. The retail vendor is not penalised if it is clear that he has no guilty knowledge, and that he has taken reasonable precautions against committing an offence. A warranty or invoice may be available as a defence to any proceedings under the Acts, but if given by a person resident outside the State the defendant must prove that he had taken reasonable grounds to ascertain and did in fact believe in the accuracy of the statements contained in the warranty or invoice.

4. **Queensland.**—By Part VI. of the Health Act 1900 and by regulations made thereunder, provision is made for the inspection of food, and for the supervision of the sale of food and drugs by local authorities. The inspection and examination of food stuffs has, however, been almost entirely undertaken by the Department of Public Health, and it appears that very few of the local authorities make any attempt to carry into execution the provisions of the Health Act relating to food. Considerable activity was shewn by the Department during the year 1908-9 in carrying out a pure-food crusade, both in Brisbane and in provincial towns. Seventy prosecutions were carried through the courts in accordance with the food sections of the Act of 1900, and in sixty-three cases, fines were inflicted. During the year 1910-11 twenty-five prosecutions were undertaken and fines were imposed in every case. In any prosecution for selling adulterated food or drugs no person may be convicted if he prove that he did not know of the adulteration, and that he could not, with reasonable diligence, have obtained that knowledge. It is also open to a defendant to prove that he purchased the goods with a written warranty from some responsible person carrying on business in Queensland.

5. **South Australia.**—The inspection and sale of food and drugs is now chiefly contained in the Food and Drugs Act 1908, and in the regulations made thereunder; certain special matters, such as water and meat supplies, are dealt with in Part VII. of the Health Act 1898. An important provision of the Food and Drugs Act is the constitution of the metropolitan area as a single district, so that the sale of food and drugs generally, as well as the inspection and supervision of dairy premises and cattle in the metropolis, is under the control of one central body—the Metropolitan County Board. Another important provision of the Food and Drugs Act is the appointment of an Advisory Committee to fix standards of foods and drugs, and to draw up necessary regulations. In addition to dealing with the supervision of the milk supply and dairies, the Act provides for the inspection and analysis of foods, drugs, chemicals, spirituous liquors, patent medicines, and proprietary articles, for the inspection and examination of all animals offered for sale or slaughter, and for the licensing of ice cream and aerated waters manufacturers. A warranty given by a person resident in South Australia is available as a defence to any proceeding under the Act, if the defendant prove that he bought the article in the same state as sold. Proof of absence of knowledge of adulteration is a sufficient defence if the defendant could not by analysis or other adequate test have obtained that knowledge.

6. **Western Australia.**—The adulteration of food and unwholesome food is now dealt with under Part VIII. of the Health Act 1911. Each local authority (now constituted by this Act the local health authority) may, and when required by the Commissioner of Health must, appoint its own analyst, inspectors, and other officers necessary



to carry out the provisions of the Act. Under the previous Health Act of 1898, fairly systematic inspection of various articles of food was carried on within municipal districts, the samples submitted for analysis consisting chiefly of milk, and it was found that the effective supervision of imported tinned meats requires constant attention. Inspection of alcoholic beverages is carried out by spirit inspectors appointed under the Licensing Acts.

**7. Tasmania.**—Though provision existed under the Public Health Act 1903 for the inspection and supervision of food and drugs, it would appear that prior to 1911 no systematic attempt at enforcement of food purity was made in Tasmania. The statutory powers which existed under the 1903 Act left these matters wholly in the hands of local authorities, and the Department of Public Health had no power to take samples for examination or analysis. In any action under that Act a defendant had to be discharged if he could prove absence of knowledge or that he bought the article in the same state as sold, and with a warranty. Under the Food and Drugs Act 1910, which came into force on the 1st of March, 1911, food and drug regulations are now placed under control of the Department of Public Health. The Act authorises the appointment of inspectors of food and drugs acting under the Chief Health Officer, or in the case of an inspector being a member of the police force, then under the Commissioner of Police, and any local authority may, and when called upon by the Chief Health Officer must, appoint food and drug inspectors. Prosecutions have already taken place under this Act, but it is stated that its efficacy is likely to be seriously minimised by the lightness of the penalties imposed.

**8. Food and Drug Standardisation.**—With the object of securing uniformity of food and drug standards of the principal manufactured products sold in the Commonwealth, a conference, which was attended by representatives of the Commonwealth and all the individual States except Western Australia, was opened in Sydney on 8th June, 1910. The result of this conference was that several adoptions of standards of food and drugs, and labelling of articles for consumption were made, so as to obtain uniformity in the several States. The recommendations of the conference deal with a variety of matters and are too lengthy for inclusion in this publication. Among the most important may be mentioned the following:—(a) The addition to articles of food of preservative substances, being other than common salt, sugar, spice, wood-smoke, vinegar, and acetic acid, should be prohibited as far as possible, and should be permitted only in minimum proportions. (b) The addition to any form of milk of any preservative (except sugar) should be prohibited. (c) The addition of foreign or artificial colourings or flavourings should be avoided as far as possible, and when permitted should be declared.

## § 4. Milk Supply and Dairy Supervision.

**1. Introduction.**—Milk is pre-eminently the food which needs most careful protection at each successive stage of its production, carriage, storage, and delivery, from exposure to infection from extraneous matter. The problem of obtaining a pure and clean milk supply has accordingly, during the last few years, demanded an increasing amount of attention from the Health authorities, and in each State special laws and regulations have been passed governing the supervision of dairy farms and dairies.

(i.) *General Provisions of Acts and Regulations.* In general, it may be said that it is not lawful to sell or offer for sale any milk which is not fresh or wholesome, or which has been watered, adulterated, reduced, or changed in any respect by the addition of water or any other substance, or by the removal of cream. Regulations made under the Acts provide for the carrying-on of dairy farms, dairies, factories, and creameries, under proper and wholesome conditions; and supervisors and inspectors are appointed to enforce these provisions. Generally, the execution and enforcement of the Acts is left to the local authorities.

(ii.) *Registration of Dairymen and Milk Vendors.* Dairymen, milk vendors, and dairy-factory or creamery proprietors are required, under penalty, to be registered. In some States registrations must be applied for before commencing to trade; in other States they must be applied for within a specified time after the premises are first used.

(iii.) *Inspection of Premises.* Dairy inspectors employed by the central departments traverse the principal dairying districts, and inspect dairy premises, dairy herds, appliances, and utensils, and ascertain in what fashion the various local authorities carry out the duties imposed on them. Regulations and instructions are issued by the central departments for the information and guidance of local authorities, dairymen, milk vendors, and others, as to precautions to be observed in order to protect milk from contamination, and to ensure cleanliness as to the structural arrangements, dimensions and ventilation of premises, and as to the care and health of dairy cattle. If an inspector is satisfied that any premises or apparatus used therein are unclean, or unfit for the purposes of dairy produce, he may require the owner to put the same in a proper and wholesome condition.

(iv.) *Notification of Diseases.* Every dairyman or milk vendor is required to report immediately any case of certain prescribed infectious diseases occurring in any human being engaged at or residing on his premises. It is the duty of the local authority to take care that communication between all persons belonging to the infected household and the milk business in all its details is prevented. Cases of notifiable diseases occurring in animals at a dairy farm or dairy must also be reported immediately, and the owner must at once isolate the diseased animal. The sale of milk from an infected cow is prohibited, and, under certain circumstances, an inspector may order an infected animal to be branded or destroyed.

(v.) *Analysis of Dairy Produce.* The local authority generally has power to enter premises and to take away samples of the milk, cream, butter, or cheese there found, and of the water supply therein, for the purpose of examination or analysis.

**2. Number of Dairy Premises Registered.**—The following table shews the number of dairy premises registered and the number of cattle thereon in each State during the year 1910-11:—

**NUMBER OF DAIRY PREMISES REGISTERED AND CATTLE THEREON, 1910-11.**

Particulars.	N.S.W.	Victoria.*	Q'land.	S. Aust.*	W. Aust.	Tas.
Premises registered ...	20,604	11,581	11,276	244	481	654
Cattle thereon ...	854,452	97,623	289,868	2,137	6,610	†

\* Figures are for year 1909-10. † Not available.

**3. New South Wales.**—The provisions of the Dairies Supervision Act 1901 extend to the whole of the Eastern and Central Divisions of this State and to all important dairying districts further inland. Other districts are brought under the operation of the Act by proclamation from time to time. Every dairymen, milk vendor, and dairy factory or creamery proprietor is required, under penalty, to apply for registration to the local authority for the district in which he resides, and also to the local authority of every other district in which he trades. Registrations must be applied for before commencing to trade and must be renewed annually.

**4. Victoria.**—The inspection and supervision in Victoria of dairies, dairy farms, dairy produce, milk stores, milk shops, milk vessels, dairy cattle, and grazing grounds are provided for by the Milk and Dairy Supervision Act 1905, administered by the Minister of Agriculture. Under the Health Act 1890 and the Pure Food Act 1905, however, the Department of Public Health is empowered to take samples of food (including milk, cream, butter, cheese, and other dairy products) for examination or analysis, and to institute prosecutions in case of adulterated or unwholesome food. By

the end of the year 1909, eighty-seven municipal districts, comprising about one-sixth of the area of the State, had been brought under the operation of the Milk and Dairy Supervision Act. The municipal councils have the option of carrying out the execution of the Act themselves or of electing for execution by the Department of Agriculture; up to the present all the municipalities in which the Act has been proclaimed have elected for Departmental execution.

5. **Queensland.**—The control and supervision of the milk supply and of dairies and the manufacture, sale, and export of dairy produce in Queensland are provided for by the Dairy Produce Acts 1904 and 1905, administered by the Department of Agriculture and Stock. These Acts and the regulations made thereunder apply only to prescribed districts, which comprise the whole of the coastal district from Rockhampton down to the New South Wales border and the Darling Downs, Maranoa, and Cairns districts.

6. **South Australia.**—The licensing and registration of dairies, milk stores, and milk shops, and the licensing of milk vendors are now provided for by the Food and Drugs Act 1908, which came into force on the 1st June, 1909. Regulations for registration under this Act were in course of preparation in April, 1910, and it is understood that in many cases the local authorities have held over registration pending the issue of such regulations. Reference has already been made (see § 3, 5 hereof) to the constitution of the Metropolitan County Board.

7. **Western Australia.**—In this State the inspection of dairy herds is under the control of the Department of Agriculture, while the supervision of dairy premises and of subsequent stages in the milk supply is carried out by the Health authorities. At the commencement of the year 1908 a campaign was instituted towards the elimination from dairy herds of tubercular cattle. This campaign took the form of the application to all the animals in each herd of the tuberculin tests and the isolation and slaughter of all re-acting animals.

8. **Tasmania.**—Under the Public Health Act 1903 it was the duty of local authorities to regulate the hygienic conditions of milk production and milk supply, and regulations dealing with milk, cream, and butter standards have been prescribed. Comprehensive by-laws for the registration and regulation of dairymen's premises existed in many districts, but outside the cities and a few towns it would appear that these were seldom enforced. These matters are now governed by the Food and Drugs Act 1910, which came into force on 1st March, 1911.

## § 5. Prevention of Infectious and Contagious Diseases.

1. **General.**—The provisions of the various Acts as to precautions against the spread and the compulsory notification of infectious diseases may be conveniently dealt with under the headings—(a) Quarantine; (b) Notifiable Diseases; and (c) Vaccination.

2. **Quarantine.**<sup>1</sup>—Under the Commonwealth Quarantine Act 1908, the systems of State quarantine formerly in operation were abolished, and a branch of the Department of Trade and Customs, under the immediate control of a Director of Quarantine, was created on 1st July, 1909. As far as is at present practicable uniformity of procedure has been established throughout the Commonwealth in respect of all vessels, persons, and goods arriving from overseas ports or proceeding from one State to another, and in respect of all animals and plants brought from any place outside Australia. In regard to interstate movements of animals and plants, the Act becomes operative only if the Governor-General be of opinion that Federal action is necessary for the protection of any State or States; in the meantime the administration of interstate quarantine of animals and plants is left in the hands of the States.

(i.) *Transfer of Quarantine Stations.* The transfer from the States to the Commonwealth of the quarantine stations, for the purposes of human quarantine, at the following places has been effected:—(a) *New South Wales.* North Head (near Sydney). (b) *Victoria.* Point Nepean (near Melbourne). (c) *Queensland.* Magnetic Island (near

1. From information furnished by W. P. Norris, Esq., M.D., D.P.H., Federal Director of Quarantine.

Townsville) and Thursday Island. (d) *South Australia*. Torrens Island (near Adelaide). (e) *Western Australia*. Woodman's Point (near Fremantle), Albany, and Broome. Animal quarantine stations in each of the States have also been transferred, and steps are being taken for the taking over by the Commonwealth of other stations. New buildings and improvements are in course of construction at several of the transferred stations.

(ii.) *Co-operation of Federal and State Authorities*. In order to secure co-operation between the Commonwealth and State authorities, and with the further object of economical administration, arrangements were, in 1909, made under which the chief medical officer of each State Health Department acts as the Chief Quarantine Officer in his State, and officers hitherto performing quarantine duties under the State Acts became Federal quarantine officers, payment for their services being made through the State Governments. Arrangements were also made for the administration of the Act and regulations relating to oversea animal and plant inspection and quarantine, to be carried out by officers of the State Agricultural Departments. Power to take action for the prevention of the spread of disease within a State still remains in the hands of the State, and as the functions of the Commonwealth and States may be exercised at the same time, the advantage of co-operation is apparent.

(iii.) *Chief Provisions of Act*. The Act provides for the inspection of all vessels from oversea, for the quarantine, isolation, or continued surveillance of infected or suspected vessels, persons, and goods, and for the quarantining and, if considered necessary, the destruction of imported goods, animals, and plants. The obligations of masters, owners, and medical officers of vessels are defined, and penalties for breaches of the law are prescribed. Power is given to the Governor-General to take action in regard to various matters by proclamation, and to make regulations to give effect to the provisions of the Act. Quarantinable diseases are defined as small-pox, plague, cholera, yellow fever, typhus fever, or leprosy, or any other disease declared by the Governor-General, by proclamation, to be quarantinable. "Disease" in relation to animals means certain specified diseases, or "any disease declared by the Governor-General by proclamation to be a disease affecting animals." "Disease" in relation to plants means "any disease or pest declared by the Governor-General by proclamation to be a disease affecting plants." The term "plants" is defined as meaning "trees or plants, and includes cuttings and slips of trees and plants and all live parts of trees or plants and fruit."

(iv.) *Proclamations*. The proclamations so far issued specify the diseases to be regarded as diseases affecting animals and plants; appoint first ports of landing for imported animals and plants and first ports of entry for oversea vessels; declare certain places beyond Australia to be places infected, or as places to be regarded as infected with plague; prohibit the importation (a) of certain noxious insects, pests, diseases, germs, or agents, (b) of certain goods likely to act as fomites, and (c) of certain animals and plants from any or from certain parts of the world; and fix the quarantine lines in certain ports of Australia.

(v.) *Regulations*. Regulations have been made prescribing the quarantine signal; the hours of clearance of vessels; forms of notices, orders, reports, and bonds to be used by masters, medical officers, quarantine officers, and importers; the period of detention of vaccinated and unvaccinated persons in quarantine; the conditions of removal of goods and mails; the method of disinfection of persons, animals, and infected or suspected articles; the conditions under which certain animals not prohibited may be imported; the sustenance charges for quarantine animals; the conditions of importation of hides, skins, wool, hair, bones, and animal manure; the method of carrying out the quarantining, disinfection, fumigation, and treatment of plants and packages. Regulations have also been made with the object of preventing the ingress to and the egress from vessels of rats and mice, and for the destruction of rats, mice, and other vermin.

(vi.) *General*. The procedure has already been greatly simplified. Instead of all oversea vessels being examined in every State, as was formerly the case, those arriving from the south and west are now examined only at the first port of call and pratique

is given for the whole of the Commonwealth, except in cases of suspicious circumstances, while vessels arriving from the northern routes are examined only at the first and last ports. It is expected that the restrictions placed upon oversea vessels will be further removed as the machinery of quarantine is improved. The present freedom from certain diseases which are endemic in other parts of the world, would, however, appear to justify the Commonwealth in adopting precautionary measures not perhaps warranted in the already infected countries of the old world.

**3. Notifiable Diseases.**—Provision exists in the Health Acts of all the States for precautions against the spread and for the compulsory notification of infectious diseases. When any such disease occurs the fact must be notified to the medical officer of health of the district. The duty of giving this notification is generally imposed, first on the head of the house to which the patient belongs, failing whom on the nearest relative present, and on his default on the person in charge of or in attendance on the patient, and on his default on the occupier of the building. Any medical practitioner visiting the patient is also bound to give notice.

(i.) *Notifiable Diseases Prescribed in each State.* In the following statement those diseases which are notifiable in each State are indicated by a cross :—

#### DISEASES NOTIFIABLE UNDER THE HEALTH ACTS IN EACH STATE, 1912.

Particulars.	N.S.W.	Vic.†	Q'land.	S.A.	W.A.I.	Tas.
Anthrax ...	...	+	...	+	...	...
Ankylostomiasis ...	...	...	+	...	...	...
Beri-beri ...	...	...	...	...	+	...
Bubonic plague ...	+	+	+	+	+	+
Cerebro-spinal meningitis ...	...	+	+	+	+	...
Cholera ...	...	+	+	+	+	+
Continued fever ...	...	...	+	...	+	...
Diphtheria ...	+	*	+	+	+	+
Dysentery ...	...	...	+	...	...	...
Enteric fever ...	...	*	+	+	+	+
Erysipelas ...	...	...	+	+	+	...
Infantile Paralysis ...	...	...	+	...	...	...
Leprosy ...	+	+	++	+	+	+
Malarial fever ...	...	...	...	...	+	...
Measles ...	...	+	...	...	...	...
Membranous croup ...	...	...	+	+	+	...
Ophthalmia neonatorum ...	...	...	...	...	+	+
Poliomyelitis anterior acuta ...	+	...	...	...	...	...
Puerperal fever ...	...	+	+	+	+	+
Pulmonary tuberculosis(phthisis) ...	...	*	+	+	+	+
Relapsing fever ...	...	...	+	+	+	...
Scarlet fever ...	+	*	+	+	+	+
Scarlatina ...	...	*	+	+	+	...
Septicæmia ...	...	+	...	...	+	...
Small-pox ...	+	+	+	+	+	+
Trichinosis ...	...	...	...	+	...	...
Typhoid ...	+	*	+	+	+	+
Typhus Fever ...	...	+	+	...	+	+
Whooping cough ...	...	+	...	+	...	...
Yellow fever...	...	+	...	+	+	+

† Those diseases marked with an asterisk in this column have been declared notifiable diseases, while those marked by a cross have been declared "dangerous infectious diseases" under the Public Health Act 1890, and when prevalent in any municipal district may be declared notifiable diseases within such district. ‡ Other diseases enumerated as notifiable under "The Health Act 1911" of this State are pyæmia, and Malta, dengue, low and Colonial fevers. § Thursday Island area only. ¶ Under the Leprosy Act 1892.

(ii.) *Duties of Authorities.* As a rule the local authorities are required to report from time to time to the Central Board of Health in each State as to the health, cleanliness, and general sanitary state of their several districts, and must report the appearance of certain diseases. Regulations are prescribed for the disinfection and cleansing of premises, and for the disinfection and destruction of bedding, clothing, or other articles which have been exposed to infection. Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid, and other infectious diseases within the meaning of the Health Acts are continually being carried out. Regulations are provided in most of the States for the treatment and custody of persons suffering from certain dangerous infectious diseases, such as small-pox and leprosy.

(iii.) *New South Wales.* The proclamation and notification of infectious diseases is dealt with in Part III. of the Public Health Act 1902. Special provision is made by that Act for the notification of small-pox and leprosy, and for the custody and treatment of lepers. Many improvements have been effected by the Sydney Harbour Trust (see Section XXVI. hereof; page 990) with a view to generally improving the hygienic condition of the area under its control, and especially with the object of preventing the introduction of bubonic plague. Special reports dealing with the ætiology of outbreaks of plague have been published.

(iv.) *Victoria.* Under Part VIII. of the Public Health Act 1890, the notification of small-pox, cholera, plague, yellow fever, and other prescribed malignant, infectious, or contagious diseases is compulsory. An amending Act, passed in 1907, requires medical practitioners and registrars to report all cases of notifiable diseases coming under their notice in any proclaimed district, and not merely those cases which occur in the district in which the practitioner or registrar is resident.

(v.) *Queensland.* Under Part VII. of the Health Act 1900, all cases of infectious diseases must be notified; special provision is made for notification of cases of phthisis and small-pox. A report on plague in Queensland for a period covering eight successive years—1900 to 1907—has been published by the Commissioner of Public Health. Apart from the statistical data collected and collated, the report deals exhaustively with the medical, preventive, administrative, and epidemiological aspects of the plague, as observed in Queensland. Plague hospitals are provided at Maryborough, Bundaberg, Gladstone, Mackay, Townsville, and Cairns. Provision is also made for the diagnosis of leprosy, and lepers are sent to Peel Island, Moreton Bay.

(vi.) *South Australia.* In this State cases of infectious diseases must be reported to the local Board, under the provisions of Part VIII. of the Health Act 1898. The onus of notification is placed primarily on the head of the family, and, failing him, the nearest relative, the person in charge, or the occupier of the house; in any case, notification must be given by the medical practitioner attending.

(vii.) *Western Australia.* Regulations made under the Health Act 1898 provide for the compulsory notification to local Boards of infectious diseases. The local Boards must report to the Central Board. The necessity for providing hospital treatment for infectious cases has been recognised by the Boards of Health, and in several instances wards for the treatment of these cases have been erected.

(viii.) *Tasmania.* Provisions regarding the prevention and notification of infectious diseases are contained in the Public Health Act 1903, as amended in 1908.

4. **Vaccination.**—In the State of New South Wales there is no statutory provision for compulsory vaccination, though such exists in all the other States of the Commonwealth. With the exception of Victoria, the Vaccination Acts are, however, not generally enforced. The following table shews, so far as particulars are available, the number of persons vaccinated in each State from 1902 to 1911 inclusive:—

## NUMBER OF PERSONS VACCINATED IN EACH STATE, 1902 to 1911.

Year.	N.S.W.*	Victoria.	Q'land.†	S. Aust.	W. Aust.	Tasmania.
1902 ...	896	16,117	...	1,906	†	3,296
1903 ...	605	20,935	...	1,857	†	24,857
1904 ...	20	20,548	...	1,476	†	53
1905 ...	32	20,116	...	1,142	†	†
1906 ...	42	20,539	...	980	†	†
1907 ...	39	20,902	...	3,165	†	†
1908 ...	42	20,924	...	1,502	616†	†
1909 ...	11	21,344	...	1,477	†	†
1910 ...	280	21,575	...	†	†	†
1911 ...	20	20,562	...	†	†	†

\* By Government medical officers only. † Returns not available. ‡ Notifications of vaccinations to district registrars during year 1908-9.

The large increase in Tasmania in 1903 is accounted for by the small-pox epidemic which occurred in Launceston in that year.

(i.) *New South Wales.* Although there is no provision for compulsory vaccination in this State, public vaccinators have been appointed. A fee is paid, and free lymph is provided.

(ii.) *Victoria.* Compulsory vaccination is enforced throughout the State, under Part IX. of the Health Act 1890. From the year 1873 up to the present time it is estimated that 72 per cent. of the children whose births were registered have been vaccinated. Free lymph is provided.

(iii.) *Queensland.* Although compulsory vaccination is provided for in this State, under Part VII. of the Health Act 1900, only one remote district has been proclaimed under the Act.

(iv.) *South Australia.* The Vaccination Act 1882, which applies to South Australia and the Northern Territory, is enforced by the vaccination officer of the State and by the Police Department. Under this Act vaccination was compulsory, but in 1901 an Act to abolish compulsory vaccination was passed. This latter Act was subsequently amended, and the present law is that no parent is liable to any penalty if, within 12 months from the birth of the child, he makes a declaration that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers the declaration to the vaccination officer. It is estimated that about 15 per cent. of the children born are vaccinated.

(v.) *Western Australia.* In this State vaccination is compulsory under the Vaccination Act 1878, which, however, remains almost a dead letter. All district medical officers are public vaccinators, but they receive no fee for vaccinations.

(vi.) *Tasmania.* All infants in Tasmania are nominally required, under the Vaccination Act 1898, to be vaccinated before the age of 12 months, unless either (a) a statutory declaration of conscientious objection is made, or (b) a medical certificate of unfitness is received. The Act is not enforced, and practically no vaccination of infants is performed in the State, or has been performed since the small-pox outbreak in Launceston in 1903, when 66 cases occurred with 19 deaths. It is estimated that 45,000 persons, or about one quarter of the present population, have been vaccinated.

## § 6. Filariasis and the Destruction of Mosquitoes.

1. **Introduction.**—The remarkable development of parasitology in recent years and the increase in knowledge of the part played by parasites in human and animal diseases have shewn that the difficulties in the way of tropical colonisation, in so far as these arise from the prevalence of diseases characteristic of tropical countries, are largely removable by preventive and remedial measures. Malaria and other tropical diseases are

coming more and more under control, and the improvements in hygiene, which science has accomplished, lend an entirely new aspect to the question of white settlement in countries formerly regarded as unsuitable for colonisation by European races. In Australia the most important aspect of this matter is at present in relation to such diseases as filariasis, malaria, and dengue fever, which, although practically unknown in the southern States, are of common occurrence in many of the tropical and sub-tropical parts of the Commonwealth. In Brisbane, for example, it is stated that during 1908 an examination was made of 200 patients who had been admitted consecutively to the general hospital, and it was found that 17 per cent. were suffering from filaria, though only a few of them had been brought in for treatment for that disease. It is also stated that an examination made in 1909 of 1000 patients admitted for all causes at the general hospital at Brisbane shewed that 13 per cent. of them were infected with filaria.

**2. Scope of Operations.**—In certain parts of Australia considerable benefit has already resulted from the adoption of methods of anti-malarial prophylaxis. The extermination of mosquitoes in their larval stage by drainage, screening and oiling of water supplies, and the isolation of infected persons, are some of the methods pursued with success. It would appear, however, that before any general comfort and freedom from house mosquitoes and from the diseases carried by these insects can result, a much wider crusade for the destruction of the mosquito, involving absolute co-operation and conscientiousness on the part of the community in the elimination of breeding places of mosquitoes, is necessary.\* In many countries "Mosquito Brigades" have been organised, whose object is the killing of the mosquito and the removal, as far as possible, of the conditions favourable to the insects. In other countries the churches, medical societies, corporations, business organisations, factories, and schools have all taken part in organising lectures and spreading literature dealing with the mosquito.

**3. Queensland.**—The existence of filaria in Brisbane was first discovered about thirty years ago. Filariasis is now on the increase, and early in the year 1909 the Commissioner of Public Health for Queensland convened a conference of medical officers of health to the various local authorities to discuss the matter. A plan for combined action in mosquito destruction was the outcome, and it is stated that good results therefrom have already been noticed. Screening of domestic and other water tanks and destruction of larvæ by kerosene have been carried out in a number of places, while particular attention has been devoted to the draining of swamps within the metropolitan area. It may here be mentioned that an Institute of Tropical Medicine was inaugurated in January, 1910, at Townsville, under the control of an expert officer. In his report for 1910, the Director of the Institute refers especially to the initial difficulties confronting him on account of (1) the scarcity of suitable laboratory animals for experimental purposes, and (2) the absence of any systematic scheme of collaboration with medical confrères throughout the tropical portions of Queensland, which is stated to be essential to the success of the Institute, both difficulties requiring some little time and money to overcome. Most of the scientific work done during 1910 is necessarily in an incomplete state, but a fairly large amount of material, especially with regard to animal parasites, has been collected and will be dealt with at an early date. A full course of instruction in tropical medicine and parasitology will be arranged for, in future, at Townsville.

**4. South Australia.**—During the year 1907 malaria assumed such a serious form at the Government Smelting Works at Daly River, in the Northern Territory, that almost every employee was invalidated to Palmerston for treatment. Early in 1908 preventive measures in the way of improved camp hygiene, treatment of swamps by petroleum, and the systematic use of quinine, were adopted, with the result that during that year no case of malaria appeared among the Government employees, although the natives and outsiders suffered as badly as before. The whole experiment cost under £5. Similar precautions have been adopted in other parts of the State.

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\* See Report of the Commissioner of Public Health, Queensland, 1908-9, Appendix C., p. 17.



5. **Other States.**—In Western Australia it is stated that malaria is not known to exist south of the 20th parallel, while filaria has not been discovered at all. No mosquito-borne diseases are known to exist in Victoria or Tasmania, and it is stated that filariasis is uncommon in New South Wales, the only cases known being imported ones. Kerosene and petroleum have been successfully used to destroy mosquitoes at various places in these States both by municipalities and private individuals.

## § 7. Supervision of Infant Life.

1. **Introduction.**—It has been frequently stated in recent years that when the social, climatic, and industrial conditions are taken into consideration the infantile mortality of Australia, particularly in the large towns, is much higher than it should be. It is now generally recognised, however, that infant mortality is largely attributable to parental ignorance and neglect, and that, in particular, improper feeding is accountable for perhaps the majority of infant deaths. In all the States of the Commonwealth, Acts have been passed with the object of generally supervising the conditions of infant life and of reducing the rate of infantile mortality, and in many of the large towns measures have been adopted by private individuals to spread among the mothers a knowledge of the best methods of feeding and caring for their infants. Milk Institutes have also been established after the manner of the *Gouttes de Lait*<sup>1</sup> in Europe, with the object of reducing the number of deaths of infants from milk poisoning in the summer months. Reference has been made in a previous part of this book (see page 189) to the number of infantile deaths and the rates of infantile mortality in each State, and it will be convenient to here shew corresponding particulars for the year 1911, classified according to metropolitan and other districts in each State:—

### INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY FOR METROPOLITAN AND OTHER DISTRICTS, 1911.

Districts	N.S.W.	Victoria.	Queensland.	S.A.	W.A.	Tasmania.	C'wealth.
NUMBER OF INFANTILE DEATHS.							
Metropolitan	1,286	1,127	334	406	262	89	3,504
Other ...	2,016	1,142	776	264	353	310	4,865*
RATES OF INFANTILE MORTALITY.†							
Metropolitan	71.56	77.54	80.85	77.60	79.02	76.92	75.61
Other ...	68.19	61.76	60.38	45.32	73.93	72.43	64.18

\* Including 4 in Commonwealth territories.

† i.e., the number of deaths of infants under one year of age per thousand births.

It may be seen that in each State the rates of mortality are higher in the metropolitan than in other districts. The causes of "preventable" deaths may generally be attributed to milk poisoning, want of knowledge on the part of mothers, inability to nurse, and lack of the necessary medical facilities.

The figures in the above table do not, however, completely represent the hygienic aspect of the question. For every infant death recorded there are probably three or four survivors who have sustained more or less serious permanent physical damage, quite apart from injuries at birth or congenital causes. It is stated that the far-reaching influence of the first year or two of life upon the whole subsequent physical welfare of the individual cannot be recognised too clearly, and it has been alleged that many serious defects and diseases occurring in later life may be credited to results ensuing from infantile disease. This is particularly the case in respect of digestive diseases.<sup>2</sup>

1. Organised action in this direction commenced in 1894 in Belgium. The original Belgian Society is known as the "*Société des Gouttes de Lait*." The movement has become an international one, and branches of the Society have been founded all over Europe. Similar philanthropic work was commenced in the United States of America before 1894.

2. See Report of Department of Public Health of Tasmania for 1906-7, by J. S. C. Elkington, Esq., M.D., D.P.H., Chief Health Officer.

The conditions regulating the employment of boys and girls in shops and factories are referred to in the section of this book dealing with *Industrial Unionism and Industrial Legislation* (Section XXVII.). Certain particulars have also been given in Section XXIV. (see pages 935-7) of this book regarding Orphanages, and Industrial and Reformatory Schools in Australia. Though perhaps not directly connected with the subject of Public Hygiene, it will be convenient to refer briefly in this sub-section to the principal Acts which have been passed in each State dealing with the subject of child-life, and to the principal functions of the States' Children's Departments.

**2. New South Wales.**—In this State there is a State Children's Relief Board under the direct control of an Honorary Board of nine members and under the administration of the Minister of Public Instruction.

(i.) *Scope of Operations.* The scope of the Department's operations comprises matters under the following Acts:—

(a) *The Infants' Protection Act 1904.* This Act deals with the control of children up to the age of seven years in licensed homes, and with the supervision of such homes. These latter fall into two classes—(1) The private homes of individual women householders, licensed for two or three children, and (2) institutions maintained by public subscription, licensed for any number of children up to 100. The Act also deals with paternity proceedings in connection with the enforcement of maintenance for illegitimate children.

(b) *The State Children's Relief Act 1901.* This Act deals with the boarding-out of destitute children, and includes the extension of monetary aid for children under twelve years of age who are allowed to remain with their own mothers when the latter are widows or deserted wives in destitute circumstances.

(c) *The Children's Protection Act 1902* deals with the supervision of lying-in homes, in so far as the children born therein are concerned. It also provides for the registration of children up to three years old boarded out privately apart from their mothers.

(d) *The Neglected Children's and Juvenile Offenders Act 1905* has provided for the establishment of Children's Courts throughout the State. The Act deals with the disposal of neglected and uncontrollable children and juvenile delinquents who come before the Courts. It contains provisions for the supervision of truant children, and for the introduction of machinery necessary to carry out the purposes of the Act.

(e) *The Public Instruction Act 1880.* The supervision of all children of school age is carried out by officers of the State Children's Relief Department, and action in regard to truancy and prosecutions for breaches of the compulsory clauses of the Public Instruction Act are undertaken.

(ii.) *General Supervision of Conditions of Infant Life.* The principal functions of the State Children's Relief Department are as follows:—(a) Provision for sickly infants with, or without, their mothers at the homes at Paddington and Thirlmere. About twenty children are treated in each home. (b) The compulsory attendance of guardians of infants, boarded out independently by their mothers under the Children's Protection Act, at the Metropolitan Hospital fortnightly, in order that the children in their charge may be systematically supervised by the doctors, and the development of ailments checked. (c) A home for healthy babies, twenty in number, at Croydon, with their mothers, the object being to free the latter from the more or less contaminating influences of large institutions, and at the same time to protect the children from dangers of infection. (d) The establishment of separate cottage homes for invalid children, according to their ailments, including special cottages for the scientific treatment of epileptic and feeble-minded children. (e) The supervision of all children

dealt with at the Children's Courts, the Carpenterian Reformatory, and the Industrial School for Girls. A special aspect of the Board's work under this heading is the supervision of children released on probation, and of children committed to the Farm Home, Mittagong.

3. **Victoria.**—The conditions of infant life in Victoria are, to some extent, supervised by the Department for Neglected Children and Reformatory Schools under the Neglected Children's Act 1890, the Crimes Act 1890, and the Infant Life Protection Act 1907. In Melbourne the Lady Talbot Milk Institute was established in 1908 in order to provide a supply of pure milk for infants. In the first annual report of the Institute, it is stated that out of about 300 infants supplied with milk by the Institute during 1908-9, only eight died. Crèches have been established in many of the suburbs of Melbourne.

(i.) *The Neglected Children's Act 1890.* This Act provided for the establishment of receiving houses and probationary schools, and for the committal of neglected children to the care of the department already referred to, or to approved private persons or institutions. Assistance is afforded to the department by ladies' committees in finding suitable homes for boarded-out children, and in supervising these homes. A receiving depôt has been established, and special schools are provided for boys who are backward in their education. A certain number of boys, who bear the best of characters, are sent to learn farming at the Rutherglen Viticultural College.

(ii.) *The Crimes Act 1890* provided, *inter alia*, for the establishment of reformatory schools for convicted children. A considerable number of court committals and transfers from gaol are made to these reformatory schools.

(iii.) *The Infant Life Protection Act 1907.* This Act came into force on the 31st December, 1907, and all infants then in registered homes were transferred to the care of the department. Provision is made for the inspection of registered homes, which are divided into districts, allotted to four inspectors. The Act does not provide for the registration or supervision of maternity homes.

(iv.) *The Children's Court Act 1906.* This Act provides for the establishment of Children's Courts in every place in the State where a Court of Petty Sessions is appointed to be held. Any boy or girl under the age of seventeen years may be released by the Court on probation under the supervision of a Probation Officer, who may at any time bring before the Court any child under his supervision who has broken any of the terms of his probation. The Courts have power to commit children to the Neglected Children's Department or to reformatory schools.

4. **Queensland.**—The Infant Life Protection Act 1905 is administered by the Commissioner of Police. This Act provides, that, with certain exceptions, no person may receive, in consideration of any payment, into his house any infant under the age of three years for the purpose of nursing such infant apart from its parents for a longer period than forty-eight hours, or of adopting such infant, unless the person is registered as the occupier of the house and the house is registered as a nursing home. Registration of adopted infants is compulsory, and notice of the birth or death of illegitimate infants must be given within three days. Police investigation occurs in the case of every illegitimate child born, whether the child be finally sent to a nursing home, adopted, or taken charge of by parents or relatives.

The Lady Chelmsford Pure Milk Institute was opened in 1909 for the supply of a clean pure milk in Brisbane for infant feeding. The delivery of the milk began on the 1st July, 1909.

5. **South Australia.**—The State Children's Act 1895 provides for the constitution of a council to have the control of all State children and the supervision of all institutions for their reception, education, or training. The Act provides for the establishment and inspection of institutions, for the commitment, release, and apprenticing or placing out of children, and for the licensing and supervision of lying-in homes and foster-mothers. Illegitimate children are also received into the institutions under the care of the council, and are placed out in various homes. It is stated that the result, so far as illegitimate children are concerned, is that the death-rate of infants supervised by the council is under 7 per cent., while the death-rate of those not under such supervision is 45 per cent.

6. **Western Australia.**—In Western Australia the State Children's Act 1907 provides for the control of boarded-out infants, the registration of foster parents, and the general supervision of the conditions of infant life and of neglected or destitute boys and girls under the age of eighteen years. The Act is administered by the State Children's Department. The registration of maternity homes is obligatory, and persons acting as paid foster-mothers to any child under the age of three years must be licensed. Neglected or destitute children may be committed to orphanages, and convicted children to industrial schools. There is one Government institution under the Act, and it is used as a receiving dépôt for the temporary detention of all classes of children. The Act also provides for the establishment of Children's Courts, which must not be held in any police or other court-house.

With regard to the prevention of infantile mortality, the educational aspect has been met by the free distribution of pamphlets giving directions to mothers respecting the care and feeding of infants.

7. **Tasmania.**—The Infant Life Protection Act 1907, which is administered by the Commissioner of Police, provides for the protection of illegitimate and privately boarded-out infants, and for the compulsory registration of nursing homes and occupiers. Notice of the death of an infant in a registered home must be given within twenty-four hours, and the adoption of illegitimate infants under five years of age must be registered. Notice of the birth or death under the age of five years of an illegitimate infant is also compulsory. The Act also deals with paternity proceedings, in connection with the payment of preliminary or maintenance expenses for illegitimate children.

## § 8. Medical Inspection of State School Children.

1. **Introduction.**—For many years medical officers of health and many others concerned in education generally have, from time to time, suggested the desirability of a medical inspection of school children. The State, which enforces school attendance under penalties, is also under the obligation of securing a satisfactory hygiene for the child during such attendance. Moreover, efficiency in education demands several things, viz., that the conditions under which the studies are made shall be physically and hygienically satisfactory; that there shall be no undue concentration of nervous effort on school work, and that the child shall be reasonably safeguarded against infection, etc. Only by an adequate scheme of medical supervision can these results be attained.

Several limited and isolated surveys of the physical proportions of Australian children have been made during the past 30 years in the various States. The first important systematic survey, however, was made in Sydney in 1901, and the results were reported by the Government Statistician of New South Wales to the Australasian Association for the Advancement of Science Conference in Hobart in 1902, and shewed

that the Sydney boy was taller than the English boy, but that his chest expansion was small in comparison with European figures.

A series of measurements on 500 boys took place concurrently but independently in Hobart during 1901, which also gave similar results. It was recognised that the figures were based on limited numbers, but they at least challenged attention. The 1901 survey in Sydney, though small, was a valuable and suggestive contribution to anthropometric research in Australia, and may be regarded as the beginning of a systematic attempt to ascertain what characteristics of bodily form are exhibited in Australia. This inquiry roused considerable interest in the other States, and series of measurements have since been made in Western Australia, Tasmania, and South Australia, by various authorities, and in Victoria by the Education Department's medical officers. Each year since 1907 the Department of Education of New South Wales has carried out regular anthropometric measurements of the height and weight of school children, and now possesses records of about 90,000 children, the results being detailed in the Department's Annual Reports. A card for each child allows his measurements for successive years to be recorded. The department perambulated the apparatus, each set serving about 20 schools, and the visits recur in the same month of each succeeding year.

**2. Co-ordination of Effort.**—It may be seen in the succeeding parts of this subsection that, while the medical inspection of school children has been carried out in some of the States of the Commonwealth in a systematic manner, in other States but little has been done in the direction indicated. So far as it has been carried out, the medical inspection of school children goes to shew that in Australia, as in other lands, the hygiene, both of the schools and of the pupils therein, is more defective than is ordinarily recognised, and that, not only preventable physical injury to the rising generation from school conditions can be avoided, but also instruction itself can be made more efficient by a proper regard to the demands of a good school hygiene. With a view to securing uniformity of procedure in the several States the Commonwealth Government in 1907 formulated a scheme and communicated with the States asking their co-operation in obtaining measurements of school children with a view to establishing the relations between age, weight and height, chest measurement, etc. Delays occurred from various causes, but in a paper read at the Science Congress in Sydney 1911, the subject was again brought under notice, and this led to the appointment by the congress of a committee of experts to encourage anthropometric research and to consider the organisation of a systematic survey of school children throughout Australia. The scheme was essentially identical with the former proposals of the Federal Government, but in the interim the report of the British Anthropometric Committee became available, thus making possible a method uniform with that of Great Britain, and making the results immediately comparable with those of Europe.

The Australian Anthropometric Committee has drawn up a memorandum setting forth the importance and object of the survey, and suggestions as to method for the use of teachers, physical trainers and others interested. This report it is expected will shortly be available.

The plan of the survey is as follows:—The children's heights, weights and chest-measurements are to be taken once a year as near as possible at the same time of the year. A card for each child enables his development to be watched. Differently coloured cards are used for boys and girls. These cards should be kept in the schools, and the results tabulated on sheets and sent to the Commonwealth Statistician for the general tabulation, the Federal Government being willing for this to be undertaken.

In several States advantage has been taken by the Anthropometric Committee of the assembling of teachers in physical training camps to arrange for a demonstration on the object and method of the survey. Much interest has been roused, particularly as affecting the physical growth of school children, and as regards fatigue-effects in connection with the school programme or drill requirements. If in the Anatomical Schools of the Universities special teaching in anthropometric methods were given, it

would perhaps facilitate the work. This has been done in some of the universities of the United Kingdom.

As regards the anthropometrical aspect of the matter, questions dealing with physique and growth must receive more intelligent attention than has hitherto been the case here, if the future of the British race in Australia is to be properly studied. A uniform scheme of comparative physical observations of children would go to shew the ultimate influence of the Australian climate on the British race, and would serve as a guide to the importance of certain forms of physical training. In addition, the importance of gathering information concerning the general trend of physical and mental development of Australian children, the variations induced by environment in different localities and different latitudes, and the extent of preventable influences capable of injuriously affecting mental and physical development, are sufficiently apparent.

**3. New South Wales.**—In this State, arrangements were made in May, 1907, for the medical inspection of school children in Sydney, and later in the year the work was extended to Newcastle. At the inauguration of the scheme, it was considered advisable to restrict the work of the first year to two populous centres in order to determine what procedure would be necessary, and what limits could best be assigned in the further development of the work. Two inspectors were appointed for the first year's work, and a third in March, 1909. The scheme as now in operation embraces Sydney and suburbs, Newcastle and the West Maitland districts, and its extension to other country centres will be carried into effect at an early date.

The results of the third year's work shew that during that period 127 schools, having an enrolment of 75,854 pupils, were visited by the inspectors. Of the total number of pupils, 16,026, or 21 per cent., were presented by the teachers for medical inspection as suffering from some physical defects. Of that number, 7008, or 43 per cent., were found to be suffering from defects of vision; 6634, or 41 per cent., were returned as suffering from post-nasal trouble; 2779, or 17 per cent., from throat trouble; 640, or 4 per cent., from swollen glands; and 891, or 5 per cent., from either defective hearing or ear trouble. The percentages here stated refer only to children presented as defective cases to the school doctors. Of the total enrolment at the schools, 9.2 per cent. had bad sight, 8.7 per cent. nasal trouble, 4.5 per cent. throat trouble or swollen glands, and 1.0 per cent. defective hearing or ear trouble.

#### NEW SOUTH WALES.—HEIGHT AND WEIGHT OF SCHOOL CHILDREN, 1909-10.

Age last Birthday.	Boys—24,591 Records.		Girls—24,168 Records.	
	Average Height.	Average Weight	Average Height.	Average Weight
	Inches.	Lbs.	Inches.	Lbs.
3 years ... ..	40.66	39.03	40.04	37.91
4 „ ... ..	42.85	42.17	42.08	40.16
5 „ ... ..	43.11	43.04	42.70	41.31
6 „ ... ..	44.72	45.06	44.49	44.61
7 „ ... ..	46.47	49.49	46.42	48.42
8 „ ... ..	48.59	53.72	48.09	52.58
9 „ ... ..	50.43	58.61	49.93	57.57
10 „ ... ..	52.23	64.03	51.91	62.83
11 „ ... ..	53.86	69.25	53.98	69.74
12 „ ... ..	55.80	75.61	55.96	77.42
13 „ ... ..	57.48	85.74	58.13	86.11
14 „ ... ..	60.14	94.14	59.84	94.93
15 „ ... ..	62.69	108.11	61.47	104.40
16 „ ... ..	64.74	118.12	62.01	112.70
17 „ ... ..	66.29	128.99	62.66	114.35
18 „ ... ..	66.70	134.16	63.34	116.26
19 „ ... ..	67.29	137.21	63.34	119.45

Since its initiation in 1907, the scheme has embraced 135 schools, having an enrolment of 80,000 pupils, while upwards of 50,000 physical records have been received from teachers. The foregoing table shews the results of height and weight measurements recorded during the year 1909-10.

4. **Victoria.**—In Victoria three medical inspectors have been appointed by the Education Department, and a commencement was made towards the end of 1909 by the examination of the pupils attending the Melbourne Continuation School. An Advisory Committee was also appointed to formulate a scheme of medical inspection, which it is proposed to extend to all State schools in Victoria. During the year 1909-10 the chief work of the inspectors consisted in carrying out a preliminary investigation of the health of the pupils in various schools in town and country, and it was stated in the Report of the Minister of Public Instruction for that year that the result of this investigation had shewn the presence of an amount of physical defect which, were it not paralleled in other lands would, in its magnitude, seem incredible. Up to the 30th June, 1910, the total number of children examined was 3560, of whom 2613 were in primary schools; of the latter number 1345 were boys, and 1268 girls. During the year ending 30th June, 1911, many of the ideas and intentions outlined in the previous Annual Education Report were initiated, and the foundation laid for a proper and systematic scheme of medical school instruction in future. In the course of that year 8491 children attending primary schools were examined and the results are appended below. The following table shews the defects and their percentage amongst Victorian boys and girls in all primary schools examined:—

**VICTORIA.—NUMBER AND PERCENTAGE OF DEFECTS IN SCHOOL CHILDREN,  
1910-11.**

Number of Children Examined.	PARTICULARS OF DEFECTS.										
	Vision.	Hearing.	Nose and Throat.	Dental.	Hair.	Deformities.			Lungs.	Heart.	Anemia.
						Chest.	Shoulders.	Lateral Curvature.			

**NUMBER SUFFERING FROM DEFECTS.**

Boys 4289	...	822	556	1,310	1,841	81	156	280	15	35	102	118
Girls 4202	...	547	602	700	2,013	1,619	34	322	31	13	80	108
Total 8491	...	1,369	1,158	2,010	3,854	1,700	190	602	46	48	182	226

**PERCENTAGE ON TOTAL NUMBER EXAMINED, SUFFERING FROM DEFECTS.**

Boys 4289	...	19.1	12.9	30.5	42.9	1.8	3.6	6.5	.3	.8	2.3	2.7
Girls 4202	...	13.0	14.2	16.7	47.6	37.6	.7	7.7	.7	.3	1.8	2.5
Total 8491	...	16.1	13.5	23.6	45.3	19.7	2.2	7.0	.5	.5	2.0	2.6

5. **Queensland.**—In this State a systematic scheme for the inspection of State school children has recently been prepared and came into operation on 1st January, 1911, under which a Medical Branch of the Department of Public Instruction was created, consisting of a Medical Inspector of Schools, a School Nurse, and a Dental Inspector. A report on the work of this branch for the half-year ending 30th June, 1911, has been presented, and shews that of 3068 children examined during that period by the Medical Inspector, 973, or 31.71 per cent., were found to be physically defective to an extent which either now seriously interferes, or threatens to do so shortly, with their educational progress. The report of the Dental Inspector discloses that of 823 children examined 97 per cent. had diseased teeth, and that only about 15 per cent. had clean mouths. The Standard of Vision here taken as interfering with the child's progress is  $\frac{1}{2}$  and  $\frac{3}{8}$ , the latter only if the child complains or suffers from headaches, or assumes unnatural attitudes in trying to see. The standard adopted for defective hearing is  $\frac{1}{16}$ . For explanation and significance of these fractions see footnote attached to the second table of this subsection.

In the report the relation between educational progress or intelligence and physique and nutrition is shown under the three degrees of comparison, indicated by the words "Good," "Fair," and "Poor." These particulars are shewn in the following table:—

**QUEENSLAND.—RELATION BETWEEN INTELLIGENCE OF SCHOOL CHILDREN AND  
PHYSIQUE AND NUTRITION, HALF-YEAR ENDING 30th JUNE, 1911.**

Intelligence.	Number Examined.	Physique.			Nutrition.		
		Good.	Fair.	Poor.	Good.	Fair.	Poor.

NUMBER OF CHILDREN.

Good	...	1,328	741	417	170	867	373	88
Fair	...	1,414	661	495	258	820	479	115
Poor	...	326	109	128	89	158	114	54
		3,068	1,511	1,040	517	1,845	966	257

PERCENTAGE ON NUMBER EXAMINED IN EACH CLASS.

Good	...	1,328	55.8	31.4	12.8	65.3	28.1	6.6
Fair	...	1,414	46.8	35.0	18.2	58.0	33.9	8.1
Poor	...	326	33.4	39.3	27.3	48.5	35.0	16.5

The children examined were also classified according to "intelligence" and "physical condition." This classification is shewn in the following table, and it may be observed that the columns marked with a (x) indicate conditions which are alleged to interfere seriously with the child's school progress. In this table "deafness" does not include the deafness accompanying adenoids, nor does "physical defects" include such as are incidental to adenoids. Excluding the first and last columns, the figures in the table represent individual defects, not individual children.



**QUEENSLAND.—RELATION BETWEEN INTELLIGENCE OF SCHOOL CHILDREN  
AND PHYSICAL CONDITION.**

Intelligence.	Number Examined.	Adenoids.			Defective Vision.*		Deafness.*	Weak Hearts.	Enlarged Glands.	Anæmia	Physical Defects.	Mental Deficiency.
		x Marked.	Slight.	Re-moved.	$\frac{x}{f_3}$ or worse.	$\frac{x}{n}$						
NUMBER OF DEFECTS.												
Good ...	1,328	290	384	38	46	111	53	20	278	151	270	0
Fair ...	1,414	401	423	54	56	128	74	30	340	298	442	0
Poor ...	326	131	81	19	14	26	24	11	104	85	131	7
	3,068	822	888	111	116	265	151	61	722	534	843	7

**PERCENTAGES OF NUMBER OF DEFECTS ON CHILDREN EXAMINED.**

Good ...	1,328	21.8	21.3	2.8	3.5	8.3	4.0	1.5	20.9	11.4	20.3	0.0
Fair ...	1,414	28.4	20.9	3.8	4.0	9.0	5.5	2.1	24.0	21.1	31.2	0.0
Poor ...	326	40.2	24.8	5.8	4.3	8.0	7.4	3.4	31.6	26.1	40.2	2.1

\* Normal hearing is assumed to be susceptible to an ordinary whisper over a distance of eighteen feet and is represented by the denominator of a fraction, while its numerator indicates to what this distance has to be reduced in order that the whisper may become intelligible. Visual condition or vision is similarly represented by a fraction, the denominator of which represents the distance in metres (a metre being approximately forty inches) at which normal vision would clearly distinguish an object, while the numerator indicates the reduction in distance required ere the patient attains clear effortless visual perception. Thus  $\frac{x}{f_3}$  would mean that a person whose eye test was represented by that fraction, could only see an object at six metres distance, which had he possessed normal vision he would have seen at a distance of twelve metres. Normal vision, which is generally tested by Snellen's ordinary test type, is represented by the fraction  $\frac{x}{6}$ .

6. **South Australia.**—No scheme for systematic medical inspection of schools has yet been adopted here, all Government action having been postponed pending receipt of a report upon the examination of 1000 school-going children in different parts of the State, which was commenced by Dr. Rogers, in August, 1909. No children under seven years nor over 15 years of age were examined. Investigations were made with regard to personal appearance, cleanliness, height, weight, chest measurements, teeth, eyesight, hearing, nose and throat, etc., and the report was presented to the Minister for Education in September, 1910, the results being, on the whole, satisfactory. As this report contains statistical details exhibiting many interesting comparisons between various States in the Commonwealth and other parts of the world, a brief summary thereof has been given at the end of this section.

7. **Western Australia.**—No general scheme for school medical inspection exists here, although examination in a few metropolitan schools has been intermittently carried on. During the latter part of 1906 and the first half of 1907 an extended examination of about 3300 children was conducted by the Department of State Medicine and Public Health with the co-operation of the Education Department. These children were attending the State schools in Perth, Fremantle, Kalgoorlie, Boulder, Bunbury, and Albany. Many physical defects among the children were detected, and the co-operation of the Inspector-General of Schools has resulted in steps being taken, where possible, to provide better hygienic conditions. The system followed during 1909 was that, wherever possible, a visit was made to a school, the teacher bringing up all children who appeared to be suffering from any physical defects or bodily ailments. The exact condition of the child having been determined, a notice was sent to the parents calling attention to the necessity of obtaining treatment for the defect. Under the "Health Act 1911," Medical Officers of Health become medical officers of schools and school children, and although complete details of their duties have not yet been worked out, an opportunity

will soon be afforded of judging how far the new machinery is likely to go towards providing a satisfactory scheme of medical inspection of school children. The Dental Society has also arranged for the examination of teeth at some of the larger schools, and over 1000 children have already been inspected. Free treatment is given where the parents are not in a position to pay for it.

8. *Tasmania*.—The credit of being the first State in the Commonwealth to provide for the medical inspection of schools and school children in a systematic way rests with Tasmania, where, under the direction of the Chief Health Officer and the Director of Education, about 1200 children attending schools in Hobart were inspected in 1906. The general examination was based upon that of the Royal Commission on Physical Training (Scotland) of 1903, but considerable modifications and adaptations were found necessary in order to fit it to immediate requirements. No attempt was made to secure anthropometric observations beyond those of unquestionable medical value, and in only one case (colour of eyes) were any purely anthropological data collected. The sociological data obtained (parental occupation, etc.) were found of much service, and produced some interesting comparative results.

Medical inspection of school children as now existing in Tasmania is carried out by three medical officers, each controlling respectively one of three areas, which for medical inspection purposes are known as Hobart District, Launceston District, and the Country Districts of the State. Additional assistants in the persons of two school nurses have been appointed to follow up the work of the Medical Inspectors. Reports on the physical condition of the children are furnished, and parents advised when medical attention is considered necessary, and in the case of parents unable to pay for such attention, orders are given for free treatment at the hospital. From March, 1907, to 31st December, 1910, the total number of children examined in State schools was 20,961, of which 11,869 were examined in country schools, 5870 in Hobart and 3222 in Launceston. During 1910, 2963 children were examined by Drs. Clark and Ormiston, 1774 by the latter, who found adenoids affecting 35 per cent., defective sight 19.3 per cent., and defective hearing 9 per cent. of the children; while Dr. Clark out of 1189 children found that 242, or 20.35 per cent., were suffering from various defects to an extent requiring medical treatment in order to fit them for their educational studies. Of these 242 children 95 had severe eye defects, and 95 were suffering from advanced adenoids. Out of the 1774 children examined by Dr. Ormiston 14 were found to be mentally deficient in the true sense of the term, while 16 others, though regarded as practically bordering on that condition, were set down as dull or backward, many of this latter group shewing the stigmata of congenital syphilis. With regard to dental condition, all the Medical Inspectors agree that the teeth of the children of Tasmania seem to be uniformly bad.

9. *Comparisons of School Children in Australia and other Countries*.—In 1909 a medical officer was appointed by the South Australian Government to carry out an inspection of 1000 school-going children residing in different districts of the State. Inspection was commenced in August 1909, and the results were embodied in a report issued in September, 1910.\* The matter therein dealt with may conveniently be subdivided into the following sections, viz.:—(i.) height, (ii.) weight, (iii.) chest measurement, (iv.) teeth, (v.) vision, (vi.) hearing, (vii.) nose and throat, (viii.) deformities, (ix.) diseases, (x) "dullards" and their physical defects.

(i.) *Height*. Comparative returns were available for all the States except Victoria and Queensland. In New South Wales and Western Australia the system of age-grouping was different to that adopted in Tasmania and in South Australia. In the former the last birthday was assumed to be the child's age, while in the latter the nearest birthday was adopted. Consequently, some slight allowance must be made for this difference in classification. The following table shews the comparative heights of school children (boys and girls) in Australian States, England and Scotland:—

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\* Report of R. S. Rogers, M.A., M.D., Hon. Consulting Physician to Adelaide Hospital, etc.

### MEDICAL INSPECTION OF SCHOOL CHILDREN.—COMPARATIVE HEIGHTS IN AUSTRALIA, ENGLAND, AND SCOTLAND.

Ages.	HEIGHT IN INCHES.					
	South Aus.	* N.S.W.	† Tasmania.	‡ West Aus.	§ England.	Scotland (Glasgow).
BOYS.						
7 ... ..	46.02	46.10	47.19	—	45.97	43.70
8 ... ..	48.20	48.22	49.00	49.10	47.05	45.80
9 ... ..	49.58	49.98	51.25	50.50	49.70	47.70
10 ... ..	51.73	51.97	52.65	52.10	51.84	49.60
11 ... ..	53.18	53.53	54.35	53.80	53.50	51.30
12 ... ..	55.31	55.20	56.30	56.10	54.99	53.00
13 ... ..	56.86	57.16	57.80	58.80	56.91	54.60
14 ... ..	59.53	60.07	60.78	60.10	59.33	56.30
GIRLS.						
7 ... ..	45.60	45.72	47.80	—	44.45	43.40
8 ... ..	47.96	47.70	48.40	48.90	46.60	45.20
9 ... ..	49.51	49.68	50.50	49.80	48.73	47.20
10 ... ..	51.53	51.67	52.43	52.40	51.05	49.00
11 ... ..	53.22	53.59	54.59	53.50	53.10	50.80
12 ... ..	55.62	55.99	56.50	55.80	55.66	52.90
13 ... ..	57.50	58.41	58.10	57.20	57.77	55.10
14 ... ..	60.00	60.23	61.28	59.30	59.80	57.10

\* Last birthday assumed to be the age of the child. † Elkington and Clarke. ‡ Blackburne. Last birthday assumed to be the age of the child. § Statistics of Anthropometric Committee. Last birthday assumed to be the age of the child; the boots of the children were not removed. || Mackenzie and Foster. Last birthday assumed to be the age of the child.

It appears from these tables that the Tasmanian children are exceptionally tall, being in advance of the other States at almost all ages. Western Australia stands next to Tasmania in this respect, while South Australian children approximate very closely to those of New South Wales in stature, the latter State having a very slight advantage. It may be seen that the heights of boys examined in Tasmania and Western Australia are greater than those examined in New South Wales and South Australia at every age, and that the New South Wales boys are consistently slightly in advance of South Australian boys, age for age. In the case of the girls, the Tasmanian girl is the tallest at all ages, except 8, when she is surpassed by Western Australia, and at 13 when New South Wales takes the lead. The stature of Western Australian girls, which exceeds that in any of the other States at the age of 8, approximates to that of South Australia at the age of 12, and is lowest of all the States at 13 and 14. As in the case of the boys, the stature of South Australian girls is very nearly the same as that of New South Wales, except at the age of 13, at which the older State has a very distinct advantage.

Comparison of the average heights of the South Australian with those of the English child tell decidedly in favour of the former at all ages. In the case of the boy, England would appear to have a slight advantage at the ages of 9, 11, and 13, but this apparent advantage disappears when it is remembered that the English children were measured in their shoes, whereas South Australian children were measured without their shoes. South Australian girls seem to have a still greater advantage in height over their English sisters than appears in the case of the boys. Only at the ages of 12 and 13 do the latter (English) seem slightly taller, but this superiority at once disappears when the boots are taken into consideration. The disparity in height is most noticeable during the first three years of school life.

(ii.) *Weight.* In comparing South Australian children with those of other States it is obvious from the tables given below that the Tasmanian children lead in weight as they were seen to do in height. The weight of South Australian children closely approximates to that of New South Wales. Among the boys, Tasmania leads at all ages except the age of 13, when the South Australian boy stands first amongst the States. The latter falls a trifle behind the New South Wales boy during his 14th year, and still more behind the Tasmanian at that age, but maintains a marked superiority over the Western Australian lad at the two higher ages. The boy in South Australia weighs nearly the same as the boy in New South Wales at the ages of 7, 8, and 14, falls a trifle behind him at 9 and 10, loses a pound in favour of the older State at 11, regains it at 12, and pushes his advantage over his rival to the extent of nearly  $2\frac{1}{2}$  pounds at 13. The Western Australian lad weighs high during his junior years at school, closely approximating to Tasmania at the ages of 8 and 9. He is considerably ahead of South Australia and New South Wales at 10, 11, and 12, but loses ground at 13, and falls into the rear of all the States at 14.

In the case of girls, Tasmania is in advance of the other States at all ages, and greatly so at the two higher ages. Western Australia is a good second at the junior ages, 8, 9, and 10. The girls from that State weigh nearly the same as those in South Australia and New South Wales at 11 and 12, almost the same as the mother State at 13, but fall behind her at 14. As in the case of the boys so also with the girls, the weights in South Australia closely approximate to those in New South Wales, at some ages being slightly in advance of the latter, at others slightly behind, the most noticeable differences being observable at the two higher ages, when the South Australian girl falls rather more than  $1\frac{1}{2}$  pounds behind in her average. One of the most interesting features is the remarkable average weight of the Tasmanian girl at 14, when she exceeds the next highest State average by upwards of 4 pounds.

South Australian boys compare favourably with average English boys in point of weight at the lowest and the two highest school-going ages, but fall very considerably behind the latter in the middle ages; *e.g.* at the ages of 10 and 11 there is an average difference of about 5 pounds in favour of the English lad, whereas at 13 and 14 the South Australian is slightly ahead in weight.

The following table shows the comparative weights of school children (boys and girls) in Australian States, England and Scotland:—

**MEDICAL INSPECTION OF SCHOOL CHILDREN.—COMPARATIVE WEIGHTS OF  
CHILDREN IN AUSTRALIA, ENGLAND, AND SCOTLAND.**

Ages.	Weight in Pounds.					
	South Australia.	* N.S.W.	† Tasmania.	† West. Aust.	 England.	== Scotland (Glasgow).
BOYS.						
7 ... ..	49.00	48.90	51.30	—	49.7	45.3
8 ... ..	53.24	53.26	55.30	55.10	54.9	49.3
9 ... ..	57.11	57.83	59.80	59.20	60.4	53.6
10 ... ..	62.48	62.78	66.10	65.20	67.5	58.3
11 ... ..	67.11	68.18	70.60	69.50	72.0	63.1
12 ... ..	75.01	73.93	79.40	76.60	76.7	68.1
13 ... ..	83.75	81.32	82.30	81.10	82.6	73.5
14 ... ..	92.41	92.98	93.70	88.70	92.0	79.3

**MEDICAL INSPECTION OF SCHOOL CHILDREN.—COMPARATIVE WEIGHTS  
OF CHILDREN IN AUSTRALIA, ENGLAND AND SCOTLAND—(continued.)**

Ages.	Weight in Pounds.					
	South Australia.	* N.S.W.	† Tasmania.	‡ West. Aust.	§ England.	 Scotland (Glasgow).
<b>GIRLS.</b>						
7 ... ..	47.92	47.63	48.80	—	47.5	43.9
8 ... ..	52.88	51.98	53.50	53.40	52.1	47.5
9 ... ..	56.89	56.59	58.90	58.50	55.5	51.9
10 ... ..	61.82	62.31	64.70	63.20	62.0	56.1
11 ... ..	68.78	68.15	72.20	69.00	68.1	61.1
12 ... ..	76.76	76.65	77.20	76.60	76.4	67.2
13 ... ..	85.61	87.21	91.40	87.70	87.2	75.1
14 ... ..	94.36	96.08	100.20	95.20	96.7	82.9

\* Last birthday assumed to be the age of the child. † Elkington and Clarke. ‡ Blackburne. Last birthday assumed to be the age of the child. § Statistics of Anthropometric Committee. Last birthday assumed to be the age of the child; the boots of the children were not removed. || Mackenzie and Foster. Last birthday assumed to be the age of the child.

(iii.) *Chest Measurement.* Owing to the variety of methods in obtaining such measurements, comparatively few reliable statistics are available. In South Australia measurements were taken at the level of the nipple next the bare skin with the arms hanging loosely at the sides. Measurements at "full inspiration" and at "forced expiration" were taken, as also the "mean" between these two, but for the purposes of comparison with other places for which similar figures are available "mean" figures only are dealt with. The following table compares the mean chest measurements of Australian boys with those in certain other parts of the world:—

**MEDICAL INSPECTION OF SCHOOL CHILDREN.—COMPARATIVE CHEST MEASURE-  
MENT OF BOYS IN AUSTRALIA AND IN OTHER PARTS OF THE WORLD.**

Age.	South Australia.	New South Wales (Sydney).	* Great Britain.	† United States.	‡ Poland.
7 ... ..	23.26	23.6	—	—	21.8
8 ... ..	23.89	23.9	—	—	22.8
9 ... ..	24.66	24.5	—	23.48	23.7
10 ... ..	25.31	25.1	26.10	24.30	24.4
11 ... ..	25.99	25.9	26.53	25.34	25.1
12 ... ..	27.04	26.7	27.20	26.28	25.6
13 ... ..	28.07	27.7	28.03	27.28	27.2
14 ... ..	29.28	28.9	28.46	28.55	—

\* Anthropometric Committee.

† Kline.

‡ Landsberger.

The following table shewing the average degree of expansion in inches amongst boys of two Australian States is very striking, the marked superiority of the South Australian boy at any age being suggestive of more careful training in breathing exercises than in the Mother State:—

**MEDICAL INSPECTION OF SCHOOL CHILDREN.—COMPARATIVE DEGREE OF CHEST  
EXPANSION BETWEEN SCHOOLBOYS IN SOUTH AUSTRALIA AND N. S. WALES.**

Age ... ..	7	8	9	10	11	12	13	14
Average degree of expansion in inches { S. Australia	2.50	2.47	2.81	2.82	2.71	3.0	2.98	3.11
{ N. S. Wales	1.8	1.8	1.9	1.9	2.2	2.5	2.4	2.5

(iv.) *Teeth.* With regard to teeth the proportion of decayed teeth in South Australia was found to be 2.73 teeth per child as against 4.2 in Hobart, and 4.6 in Sydney, in which latter place, however, only ages between 7 and 14 inclusive were dealt with. An examination of 10,500 English and Scottish children averaging the age of 12 shewed a percentage of 3.5 decayed teeth per child as against 1.8 per South Australian child of same age, while Sydney shewed 4.8, New South Wales Country Districts 3.5, and Hobart 3.3 for same age. It is somewhat difficult, however, to obtain reliable data upon this matter, as it is not always made clear whether the averages given refer to second teeth only or to both sets. Out of the whole number of 1007 children examined in South Australia only 70 were found to possess perfect sets of teeth.

(v.) *Vision.* Keenness of vision was tested with the ordinary Snellen's type read at six metres. The various tests made disclosed that the vision of South Australian children is by no means ideal, 15 per cent. of them being unable to read (under normal test conditions) with both eyes separately. The percentage of those possessing normal keenness of vision (6/6) amounted to 54.8. Defective vision in school children appears to be worse in other parts of the Commonwealth, the percentage for New South Wales being 27.7; Hobart, 44.2; Western Australia, 38.3, for children between the ages of 8 and 16 inclusive. In Edinburgh and Aberdeen similar tests revealed percentages of 31.7 and 18.5 respectively. In analysing defects in vision amongst South Australian children, 6/6 was taken as representing "normal" vision; 6/9 "fair"; 6/12 "medium"; and less than 6/12 "bad" vision. For explanation and significance of these figures see footnote attached to second table of sub-section 5 (Queensland) on page 1131 hereof.

Any attempt to record errors of refraction without the aid of retinoscopy being necessarily more or less unsatisfactory, and as the conditions under which these South Australian children were examined absolutely precluded the use of retinoscopy, only such tests as experience and circumstances rendered practicable were adopted. The tests used included, amongst others, a series of striped balls, striped letters, and a series of radiating lines. (a) *Astigmatism.*—The percentage of astigmatism for children (of both sexes) in South Australia between the ages of 8 and 14 inclusive, was found to be 36.8, but many of the ailments were of low degree, the children possessing "full vision" (6/6). No definite relation seems to exist between this trouble and the age of the child, and probably ought not to, astigmatism being a congenital defect. (b) *Hypermetropia.*—Owing to the impossibility of applying the retinoscopic test the examination for hypermetropic errors has not been satisfactory, and must be greatly underestimated, as only the "manifest" cases were recorded. Long sight (hypermetropia) among children is a congenital defect which is present in a very large number of children in the early school-going ages. Later on it may be replaced by normal or even by short sight. The unusual power which a child has, by straining the eye, of bringing it to a correct focus enables it in a great many instances to hide the defect, so that it only becomes "manifest" at a later period of life. The percentage of "manifest" cases among children examined was only 5.6, which is undoubtedly greatly below the extent which would have been revealed by a mirror examination. (c) *Myopia, or Short Sight.*—The general percentage of myopia was found to be 5.9. In the north a few schools were examined in which a large number of short-sighted children were found, and these have considerably raised the percentage throughout the State. In the metropolitan area the percentage was 3.5; in the southern areas 2.7, and in the northern areas 9.8.

*Medical Inspection of School Children.* The following table shews the percentage of astigmatism, manifest hypermetropia, and myopia in South Australian boys and girls at various ages:—

TABLE SHEWING PERCENTAGES OF ASTIGMATISM, MANIFEST HYPERMETROPIA, AND MYOPIA IN SOUTH AUSTRALIAN BOYS AND GIRLS AT VARIOUS AGES.

Ages.	Boys.			GIRLS.		
	Astigmatism.	Hypermetropia.	Myopia.	Astigmatism.	Hypermetropia.	Myopia.
7 ...	38.5	3.8	—	40.5	7.8	1.8
8 ...	31.8	9.0	—	40.6	6.5	3.2
9 ...	38.2	4.4	3.9	44.7	5.6	5.6
10 ...	37.1	1.5	5.1	43.2	5.8	4.4
11 ...	38.2	4.4	8.9	40.9	6.2	6.2
12 ...	40.8	5.4	9.0	31.1	8.7	7.8
13 ...	28.8	4.4	9.3	40.9	3.0	10.9
14 ...	22.2	5.7	10.1	31.4	7.3	7.8
Average at all ages ...	34.4	4.8	5.8	39.1	6.4	6.0

The above table shews the proportion of myopia to be almost the same in boys and girls. It also shows a marked tendency for the defect to increase with the school age. This corresponds with observations made elsewhere. Myopia, unlike the two other errors of refraction (astigmatism and hypermetropia) already dealt with, is generally an acquired defect, and is usually the result of eye-strain. Faulty position, or lighting, and other school defects are often contributing causes. It must be remembered that once a child acquires short sight the trouble is likely to be a progressive one unless checked by suitable glasses.

The number of errors of refraction found throughout the State, even when they did not reduce the visual acuteness, are, nevertheless, potential causes of future eye troubles. The children with apparently perfect vision formed only a small majority; and it is questionable whether they would have been in the majority had it been possible to correctly estimate the proportion of hypermetropia.

(vi.) *Hearing.* For this defect each ear was tested separately, the test employed being a whisper at the distance of eighteen feet, and of the 1007 children examined, in 34 cases or 3.3 per cent. deafness was observed, 16 of them being affected in only one ear. Similar statistics show a percentage of 12.1 for Hobart, while the percentages for West Australian children range from 4 to 15 in the different schools. In Edinburgh the percentage for distinctly defective children was 6.7; of defective 35.2. In Aberdeen the results were exceptionally good, only 5 children being distinctly defective, while the proportion of children set down as possessing slightly defective hearing was 13 per cent. Low percentages of deaf children in metropolitan areas may be greatly due to the facilities which exist for removing adenoid growths.

(vii.) *Nose and Throat.* Examination shewed that 17 per cent. were mouth breathers and that nearly 61 per cent. of the children were suffering from enlarged tonsils, a percentage sufficiently high to be regarded as a somewhat serious matter, when the amount of ill health directly or indirectly arising from such a condition is considered. South Australia seems to possess unenviable prominence in this respect, the percentage of the other places being New South Wales, 49; Hobart, 38; Western Australia, 20-40; Edinburgh, 52; and Aberdeen 30 per cent.

(viii.) *Deformities.* Twenty-four cases of pigeon-breast were noted, and it was observed with satisfaction that cases of curvature of the spine were exceedingly rare, only

0.6 per cent. of spinal deformities being found amongst South Australian children, as against 8 per cent. for Hobart, and 5 per cent. in Western Australia. The New South Wales Report for 1910 states that spinal curvature amongst school children is infrequent, only 15 cases out of several thousand children having been noted.

(ix.) *Diseases.* This section deals with various ailments, such as skin troubles, diseases of the glandular system, the bones and joints, and nervous disorders, but discloses nothing sufficiently important to warrant any special reference here.

(x.) *Dullards.* The report presents many features of significant import, which emphasise the urgent necessity for medical inspection of school children, but none more so than the information contained in the section bearing upon "Dullards and their physical defects." Concerning these and their condition the examiner remarks that "no number of arguments could be more overwhelmingly convincing for this necessity [*i.e.*, medical inspection], and to expect such children, suffering as they are from many remediable troubles, to keep pace with their better-equipped schoolfellows, is highly unreasonable." Of the 1007 examined, 111 children, or 11 per cent., were marked "dull" by the teacher. Fifty-seven of these were boys, equal to 11.4 per cent.; 54 were girls, equal to 10.6 per cent. An analysis of these cases revealed the following conditions:—Twenty suffered from very serious defects of vision; 21 were bad "mouth-breathers" (affected with adenoids); 7 were mentally defective in a very marked degree; 7 were very deaf; 3 had speech defects; 2 had heart disease; 1 was strumous; 1 had a large abdominal tumour; 1 suffered from anæmia and general debility; 1 had chronic bronchitis. These conditions will readily account for 57.6 per cent. of the "dull" children. Of the remainder, three were quadrons of less than average intelligence, and nearly all the other "dullards" suffered from some minor visual defect, enlarged tonsils, or some trouble calculated to handicap them in their school work.



## SECTION XXXI.

## THE COMMONWEALTH SEAT OF GOVERNMENT.

## § 1. The Selection of the Territory.

1. **Constitutional Provisions.**—The powers under which the Commonwealth Government has acted in taking steps towards the establishment of a seat of Government are conferred by the Commonwealth Constitution Act 1900. By section 125 of that Act (see p. 32 hereinbefore) it was provided that the seat of Government of the Commonwealth shall be determined by the Parliament and shall be within territory granted to, or acquired by, the Commonwealth. It was also provided (a) that the territory shall be situated in New South Wales not less than 100 miles from Sydney, (b) that it shall contain an area of not less than 100 square miles, and (c) that such portion of the territory as consists of Crown lands shall be granted to the Commonwealth without any payment therefor. Finally, the section provides that Parliament shall sit at Melbourne until it meets at the seat of Government.

In Year Book No. 4 (p.p. 1134 to 1160), an article was published giving detailed information as to the events leading to the selection of the Federal Capital territory, and as to the progress of operations in connection with the establishment of the capital city. The article was prepared from information gained from personal observation and from data kindly furnished by Lieut.-Colonel David Miller, V.D., I.S.O., Secretary for Home Affairs, under whose supervision all preliminary operations in the Federal Capital territory have been conducted. Information was also supplied by Lieut.-Colonel Owen, A.I.C.E., Director-General of Works, and Mr. C. R. Scrivener, Director of Commonwealth Lands and Surveys.

2. **The Seat of Government Act 1908.**—After considerable delay it was decided by the Seat of Government Act 1908 that the seat of Government should be in the neighbourhood of Yass-Canberra in New South Wales. The chief provisions of this Act were (a) that the seat of Government should be in the district of Yass-Canberra in the State of New South Wales, (b) that the territory to be acquired by the Commonwealth should contain an area of not less than 900 square miles, and (c) that the territory should have access to the sea.

Under this Act, then, the district in which the seat of Government is to lie was finally selected; it yet remained, however, to determine the actual territory for the seat of Government within that district, and to provide the machinery for the acquisition of such territory by the Commonwealth. The locality of the Yass-Canberra district may be seen on reference to the map given on page 1149.

## § 2. The Acquisition of the Territory.

1. **General.**—The chief facts relating to the actual acquisition of the Capital territory by the Commonwealth Government from the Government of New South Wales are outlined in Year Book No. 4 (pp. 1136-8). The boundaries of the territory as originally proposed and as finally selected may be seen by reference to the map on page 1150 hereof.

**2. Agreement between Commonwealth and New South Wales Governments.**—On the 18th October, 1909, the Prime Minister of the Commonwealth and the Premier of New South Wales, subject to the approval of their respective Parliaments, agreed to the surrender by the State and the acceptance by the Commonwealth of an area of approximately 900 square miles (shewn on the map on page 1151 hereof), and made certain stipulations with respect to the surrender and acceptance of the territory. The State also agreed to grant to the Commonwealth an area of two square miles for the purposes of a Commonwealth port, and in addition thereto certain other areas aggregating 2302 acres, which were considered necessary for the defence of the port. The State of New South Wales further granted to the Commonwealth:—(a) the right to construct, maintain, and work a railway from the territory to Jervis Bay; (b) the right to use the waters of the Snowy River or such other rivers as may be agreed upon for the generation of electricity for the purposes of the territory; (c) paramount water rights over the catchment areas of the Queanbeyan and Molonglo Rivers and their tributaries.

The State further agreed:—(a) To reserve from sale, lease, and occupation, except with the concurrence of the Commonwealth, all Crown lands in the catchment areas above referred to; (b) to protect from pollution the waters of the Queanbeyan and Molonglo Rivers; (c) in the event of the Commonwealth constructing a railway within the territory to its northern boundary, the State agreed to construct a railway from a point near Yass to join the Commonwealth line.

**3. Seat of Government Acceptance Act 1909.**—On the 13th December, 1909, the Seat of Government Acceptance Act was assented to. This Act was expressed to commence on a date to be fixed by proclamation after the New South Wales Parliament had passed an Act notifying the agreement and surrendering the territory. The Acceptance Act confirmed the agreement (which was incorporated as a schedule to the Act), determined the site of the seat of Government, and authorised the Governor-General to declare by proclamation that on and from the proclaimed day the territory was accepted by the Commonwealth. It also made provision for the continuance in the territory, after its acquisition by the Commonwealth, of State laws and private interests in land and for the commencement of the administration of the territory by the Commonwealth.

On the 14th December, 1909, a similar measure entitled the Seat of Government Surrender Act was passed by the Government of New South Wales. The Act came into force by proclamation on the following day; it ratified the agreement and surrendered the territory to the Commonwealth.

**4. Proclamations Effecting Acquisition of Territory by Commonwealth.**—On the 20th January, 1910, a proclamation was issued by the Governor-General bringing the Seat of Government Acceptance Act into force on the 22nd January following. The effect of this proclamation was to bring the Act into force to the extent of enabling the Governor-General to issue a second proclamation vesting the territory in the Commonwealth. Prior to the issue of the second proclamation it was, however, considered advisable to secure further legislation in the direction of an Act to provide for the proper government and administration of the territory. The *Seat of Government (Administration) Act* was accordingly passed on the 25th November, 1910; the provisions of this Act are referred to in a later part of this section. On the 5th December, 1910, the second proclamation was carried vesting the territory in the Commonwealth on and from the 1st January, 1911.

### § 3. Physiography.

**1. General.**—The general locality of the Federal territory is shewn on the map on page 1149. The chief topographical features of the whole territory may be seen by reference to the map on page 1152, while those of the districts in the immediate vicinity of the city site are shown on a larger scale on the map on page 1151. The total area of the territory is approximately 900 square miles, or 576,000 acres, of which it will be necessary to reserve from occupation the catchment area of the Cotter River, which has an extent of 170 square miles, or 108,800 acres. An area of about 12 square miles, or 7680 acres, has been set apart for the purpose of the city site, and it is proposed to reserve a further area of about 100,000 acres for parks, roads, military college, and other public purposes outside the city area, leaving 359,520 acres available for profitable occupation under reasonable conditions.

As regards accessibility, Canberra is 204 miles distant from Sydney, 429 miles from Melbourne, 912 miles from Adelaide, and 929 from Brisbane, from which it may be seen that the capital site is reasonably equidistant from the chief centres of population of the Commonwealth. As to access to the sea, it has been found that there is a practicable route for a railway between Canberra and Jervis Bay with a length of about 123 miles. To the north of the territory the country is open, and good roads lead to Yass (*via* Hall) and Gundaroo (*via* Sutton).

In Year Book No. 4 (pp. 1139-1142), reference was made to the chief topographical features of the Federal territory. For this purpose the territory was classified under four main heads:—(i.) The Canberra Ridge and Plain; (ii.) the Murrumbidgee Scarp; (iii.) the Paddy's and Gudgenby Rivers areas; and (iv.) the Cotter River catchment.

**2. Meteorology.**—Meteorological observations have not been taken on the capital site itself over a sufficient number of years to enable a proper appreciation of climatic elements to be arrived at. At Queanbeyan, however, which is only 8 miles distant from the capital site, rain records have been taken since September, 1870; at Duntroon since 1896; and at a number of other places near the capital site for various periods. Particulars of rainfall and temperatures, as recorded at Queanbeyan, have already been given in this book (see page 109.)

(i.) *Rainfall.* The average rainfall for the whole of the Federal territory has been computed by the Commonwealth Meteorologist to be 25.5 inches, or about that of Melbourne or London. The following table gives particulars of the rainfall recorded at several places near the capital site:—

**COMMONWEALTH SEAT OF GOVERNMENT, — RAINFALLS RECORDED AT PLACES IN VICINITY OF CAPITAL SITE.**

Station.	No. of Years.	Average.	Greatest.		Lowest.	
			Year.	Amount.	Year.	Amount.
		Inches.		Inches.		Inches.
Duntroon ... ..	16	18.74	1900	28.94	1902	11.09
Kiandra ... ..	37	64.55	1889	90.06	1908	42.18
Lake George ... ..	26	27.00	1887	42.11	1908	15.90
Queanbeyan ... ..	41	22.52	1887	41.29	1902	10.45
Red Hill ... ..	25	33.89	1887	49.66	1902	18.24
Uriarra ... ..	15	32.92	1887	54.11	1899	20.00

The highest recorded average rainfall within the Federal territory is 32.92 inches at Uriarra, and the lowest, 18.74 inches at Duntroon. It is stated, however, that neither of these records can be accepted as accurate. At Queanbeyan the average rainfall is 22.52

inches; as much as 41.29 inches were registered at that place in 1887, and as little as 10.45 inches in 1902, a range of over 30 inches. The average rainfall in the city site itself is estimated to be 21.80 inches per annum. This equals or exceeds that recorded at the following places:—Berlin, Budapest, Christiania, Copenhagen, Madrid, Marseilles, Moscow, Naples, Paris, San Francisco, Stockholm, St. Petersburg, and Vladivostock.

No official records have been taken within the Cotter catchment area, but it is estimated that the average rainfall cannot be less than from 40 to 60 inches per annum, since Kiandra, which is not many miles distant, has an average of 64 inches and is exposed to the same rain-bearing winds, while it has the disadvantage of being some 500 to 1000 feet lower than many of the peaks which serve as condensing or precipitating agents for the Cotter River. If the records of Kiandra can be taken as a guide, it follows that the precipitation on these higher levels does not suffer the extreme annual variations to which the lower levels of the Federal territory are susceptible, so that the flow of the Cotter River may reasonably be regarded as both fairly uniform and constant.

(ii.) *Temperature and other Matters.* The meagre temperature data so far obtained over the capital site leave information as to many phases of weather inconclusive. Taking Queanbeyan as representative, the mean annual temperature may be assumed to be 55° Fahr., the summer mean 68°, and the winter 42°. The maximum shade temperature recorded at Queanbeyan for the past seventeen years is 104°, the minimum 11° Fahr.; the ordinary summer temperatures are high, while the nights are invariably cool. During winter the temperature frequently falls below freezing point; the minimum recorded in 1911 was 22°, and the winter of that year was quite a normal one. At Duntroon (Military College) the minimum for 1911 was 25°. The prevailing winds during the winter months are from points west of the meridian, and since those from the south, south-west and west pass over the snow-clad Alps, they are keen. During the summer, hot winds from the west and north-west alternate with cool winds from the south, while the frequent north-east winds from the ocean are refreshing and serve to modify the summer temperature. It is rare for snow to fall within the city site, and still more rare for it to remain unfrozen for more than a few hours after sunrise. Fogs are neither frequent nor dense. Observations of evaporation and other climatic elements are not available for a period sufficiently long to enable a reliable estimate of normals, other than those of rain and temperature, to be formed.

A meteorological station was established in 1910 on the capital site and the following instruments installed:—Evaporation tank, thermograph, barograph, hygrograph, aspirator, rain gauge, anemometer, and sunshine recorder.

**3. Geology, Vegetation, Soils, and Agriculture.**—For information as to these matters reference may be made to Year Book No. 4 (pp. 1142-5).

**4. Jervis Bay.**—The territory on the south side of Jervis Bay acquired by the Commonwealth includes (a) an area of about two square miles as described in the first schedule to the Seat of Government Acceptance Act 1909; (b) an area of 132 acres, known as Bowen Island, described in the same schedule; and (c) six other areas aggregating 2270 acres, also described in the schedule. The Commonwealth recently acquired an additional area of about 5000 acres to embrace the headwaters of Telegraph Creek, and the New South Wales Government has agreed to amend the Seat of Government Acceptance Act so as to embrace an additional area of about 9000 acres to include the catchment area of Lakes Windermere and Mackenzie, and the site for the Naval College. The State has also agreed to grant sovereign rights over the area between Bowen Island, Captain's Point, St. George's Basin, Sussex Inlet, Wreck Bay, and the South Pacific Ocean; in this area is included a small portion of the waters of Jervis Bay.

The entrance to Jervis Bay, between Bowen Island and Point Perpendicular, is  $1\frac{3}{4}$  miles in width. The main Federal territory is situated on the southern side of the bay, at what is known as Darling Road, where there is a good anchorage on a sandy bottom, carrying a depth of from 6 to 11 fathoms of water at low-water spring tides. The 5-fathom line comes close up to the shore, and there is nothing less than 11 fathoms thence to the ocean. The sheltered area of Darling Road may be taken to be about  $1\frac{1}{2}$  square miles, and affords an excellent shelter for vessels of even the greatest draught.

## § 4. Administration and Organisation of Services.

1. **General.**—By section 6 of the Seat of Government Acceptance Act 1909, it is provided that all laws in force in the Commonwealth territory, at the date of acquisition by the Commonwealth, shall, so far as applicable, remain in force until other provision is made. Power is given to the Governor-General to exercise certain functions hitherto vested in the Governor of New South Wales, subject to the proviso that the Governor-General may direct that any such function shall be exercised on behalf of the Commonwealth by the authorities of the State in whom it was previously vested. Before issuing the proclamation actually effecting the acquisition of the territory it was thought desirable to make further provision for the administration of the territory by the Commonwealth. The Seat of Government (Administration) Act was accordingly passed in November, 1910.

2. **The Seat of Government (Administration) Act 1910.**—This Act, which came into force on the 1st January, 1911, provides for the government of the territory and deals with the following matters:—(a) *Ordinances.* The Governor-General is authorised to make ordinances having the force of law in the territory, either House of Parliament being empowered, however, to disallow any such ordinance by passing a resolution to that effect. (b) *State Acts.* It is provided that certain State Acts shall not continue in force in the territory. These Acts are as follows:—The Conciliation and Arbitration Act 1899, the Industrial Disputes Acts 1908 and 1909, the Local Government Acts 1906 to 1908, the Country Towns Water and Sewerage Act 1880, and all acts imposing rates, taxes, or duties (except duties on the estates of deceased persons). (c) *Commonwealth Acts.* It is also provided that the following Commonwealth Acts should apply within the territory:—The Commonwealth Conciliation and Arbitration Acts 1904 to 1910, the Australian Industries Preservation Acts 1906 to 1909, and the Secret Commissions Act 1905. (d) *Crown Lands.* The freehold of any Crown Lands in the territory cannot be sold or disposed of except in pursuance of some contract entered into before the 1st January, 1911. (e) *Jurisdiction of Inferior Courts.* The inferior courts of the State of New South Wales exercise the same jurisdiction as they had before the commencement of the Act.

3. **Ordinances.**—Up to the end of March, 1911, five ordinances had been made under the provision referred to above. (a) The first of these came into operation on the 1st January, 1911, and deals with the provisional government of the territory. It directs that the State laws are to continue to be administered by the authorities of the State, and that magistrates, gaolers, and police are to be deemed to be officers of the territory. No new license to sell intoxicating liquor in the territory may be granted; any existing publican's license may, however, be renewed from time to time for the same premises. (b) The second ordinance, providing for the making, levying and expending of rates on land in the capital territory, was made on the 25th October, 1911. This ordinance was amended by the third ordinance, dated the 11th December, 1911, and by the fifth ordinance, dated the 20th March, 1912. (c) The fourth ordinance providing for the care, control, and management of public places and for the regulation of traffic was made on the 1st February, 1912.

It is proposed to pass Commonwealth Acts providing a complete scheme for the government of the territory, as the opportunity and necessity arise. In the meantime it is intended to make other ordinances at an early date dealing with various urgent matters; it is understood that the first of these will relate to the local government of the territory by the Commonwealth.

Information relating to financial and other arrangements, and to the scheme for the organisation of services in the Federal territory, may be found in the last issue (No. 4) of the Commonwealth Year Book (see p. 1151).

## § 5. Surveys.

1. **General.**—After the acquisition of the territory and the selection of the city site, the first step to be taken towards the establishment of the capital city is the carrying out of a large number of necessary surveys. These comprise (a) contour surveys; (b) triangulation survey of the territory; (c) demarcation of the boundaries of the territory and the catchment areas; (d) engineering surveys for water-supply, sewerage, roads, bridges, and other associated objects; (e) topographical or feature surveys of the territory and of the catchment areas of the Molonglo and Queanbeyan Rivers, comprising in all an area of about 1480 square miles; (f) road surveys; (g) surveys in connection with the Yass-Queanbeyan railway; (h) demarcation of boundaries of lands at Jervis Bay; (i) surveys in connection with the railway line to connect the capital city with Jervis Bay, and the establishment of a harbour at Jervis Bay; (j) redetermination of boundaries of privately-owned properties in the territory; (k) preparation of plans and descriptions of the whole of the foregoing surveys. These surveys are being carried out under the direction of the Commonwealth Director of Lands and Surveys.

2. **Astronomical Observatory.**—In connection with these surveys it is in the first place important to observe that a temporary astronomical observatory has been established on the summit of a range of hills, known as Mount Stromlo, about 6 miles south-west of the city site, and situated symmetrically with regard to the eastern and western boundaries of the territory. The primary object in fixing this site is the determination of the initial meridian, to which all surveys, including not only those within the Federal territory but all others throughout Australia, will ultimately be referred. A point on the summit of this range has been determined as the origin of all co-ordinates for the surveys which are to be carried out. Observations are being conducted at Mount Stromlo, and the photographs are being taken to determine the atmospheric conditions. A road with easy gradients  $2\frac{1}{4}$  miles long has been constructed from the base to the summit of the mountain. Further details regarding the observatory site may be found in Year Book No. 4 (p. 1152).

3. **Progress of Surveys.**—Survey operations are steadily progressing. They include the demarcation of the boundaries of the territory, the determination of the boundaries of privately-owned properties, surveys for engineering works and proposals (including railways) and for other necessary purposes. For further information reference may be made to Year Book No. 4 (pp. 1152-4).

(i) *Railway to Jervis Bay.* A route for a railway to Jervis Bay, connecting with the line from the city site to Bungendore, has been selected, and location surveys are now being carried out in view especially of the early establishment of a Naval College at Jervis Bay. The length of the proposed line is approximately 96 miles, with a ruling gradient of 1 in 50 and curves of 12 chains radius as a minimum. The only bridges of any size will be those across the Shoalhaven and Mongarlow Rivers; smaller bridges will be required crossing Reedy and Durra Durra Creeks and the Coorang River. The descent towards Jervis Bay is gradual, the highest point being at the departure from the Goulburn-Cooma railway at 2550 feet above sea-level.

4. **Determination of Boundaries and Particulars of Land Tenure.** Amongst other matters which are in train may be mentioned the valuation of privately-owned properties lying within the territory, with reference to which the New South Wales Government has furnished a detailed statement shewing the nature of each occupation together with certain information in the possession of the State Department bearing upon the values of the properties. Particulars regarding the tenure of land within the Federal territory may be found on page 332 of this book.

Under the Loan Act, 1911, authority has been granted for raising the necessary funds to enable the privately-owned lands within the territory to be acquired by the Commonwealth.

## § 6. The Building of the City, and Associated Matters.

1. **Preliminary Measures.**—Whilst the foregoing survey operations are being performed it is proposed that the preliminary schemes for workmen's habitations, water-supply, sewerage, and other necessary works should be carried out for the necessities, not only of the city itself in its earlier stages, but also of the large number of persons who will be engaged on its construction.

(i.) *Accommodation for Workmen.* Arrangements for housing the employees engaged on the preliminary works and for controlling the area occupied by them are being made. For the purpose of providing in a suitable position an area upon which the officers occupied in surveying and other work, and other persons engaged in the establishment and construction of the city will reside, the estate known as Acton, covering an area of 1780 acres on the north side of the Molonglo River, has been acquired. Quarters for unmarried officers and cottages for married officers are being erected on this estate. During the earlier stages, workmen will probably be distributed on engineering works away from the city site, but from the time when construction within the city begins, there will be an aggregation of a considerable number of men, their families, and dependents.

When this stage arrives, it is proposed to lay out the area referred to as a semi-permanent village. The streets will be formed and drained; cottages erected for married men and families; and accommodation provided for single men. Immediate steps are to be taken for the erection of offices and quarters of the staff. It is also proposed to establish a general store, where all consumable supplies may be purchased. A hospital is also to be provided and equipped, the medical officer in charge to act also as health officer. The establishment of a Government hotel and the provision of schools for the education of children are also in view.

(ii.) *Transport.* Steps are to be taken for the early construction of a railway connecting the centre of distribution at the city site with the Goulburn-Cooma line, either at Bungendore or at Queanbeyan. The construction of such a line will facilitate the supply of materials, plant, stores, and provisions, and will thus decrease the cost of engineering and building construction, and of workmen's living. In the initial stages it may be found necessary to construct a tramway from Queanbeyan for transport purposes until the railway is opened, such tramway to follow the route of, and be a permanent step towards, the line connecting Yass and Queanbeyan. The roads in use in the territory are approximately 200 miles in length; about one-half of these are formed and gravelled in parts, the other half having natural surface with slight formation. A substantial wooden bridge has been erected over the Molonglo River; it will carry the heaviest road load and, if necessary, could be used for railway traffic, pending the construction of a permanent bridge for railway purposes only. There are in addition four other bridges in the territory—two each over the Murrumbidgee and Molonglo Rivers—constructed of timber. A scheme is to be prepared for an efficient system of roads throughout the Federal territory, radiating from the city site.

All roads in the territory have been attended to, and the main roads, bridges, and approaches put into a state of repair, such as is warranted by the existing traffic. A modern road-making plant has been purchased and is in use with much resulting economy and efficiency.

(iii.) *Water-supply and Sewerage.*—It is proposed that a provisional scheme for water supply and sanitation should be carried out at an early date, so that the men who will be engaged on the construction of the permanent water-supply and sewerage systems, of roads, bridges, railways, and other works, will be provided for in a manner which will meet all requirements in the direction of health, and which will not in any way interfere with the site upon which the capital itself will eventually stand. At a later stage, when these permanent works are sufficiently advanced and when construction

within the city site commences on a large scale, a water-supply system will probably be adopted so as to form a permanent step towards the water-supply of the city upon official occupation. Similarly, in regard to sewerage, at first the arrangements will probably be more or less of a temporary nature, but it is proposed that the engineering works should be pushed so far ahead before building operations in the city are commenced, as will admit of a location being assigned for workmen, which will, in course of time, become a sewage district for the city extensions. The question of water-supply for afforestation will also receive early consideration.

(iv.) *Afforestation.* It is proposed to take steps at once for the afforestation of that part of the territory contiguous to the city site, in such a manner as not to interfere in any way with the design of the city. By being planted and properly laid out at an early date, the trees will be in a forward state by the time the capital city is ready for occupation. Approval has been given for the establishment of a nursery for the propagation of trees, plants, and shrubs, and the work is to be proceeded with at once. The scheme includes the growth of trees for scenic and ornamental purposes, for the prevention of the erosion of the banks of rivers and creeks, and for shelter. It appears probable that concurrently with the foregoing operations it will be found advantageous to commence some of the constructional works for the lake which is to be formed by utilising the waters of the Molonglo River at the capital site. It is proposed to obtain expert advice as to a scheme of afforestation and to establish local nurseries for the trees which will be used.

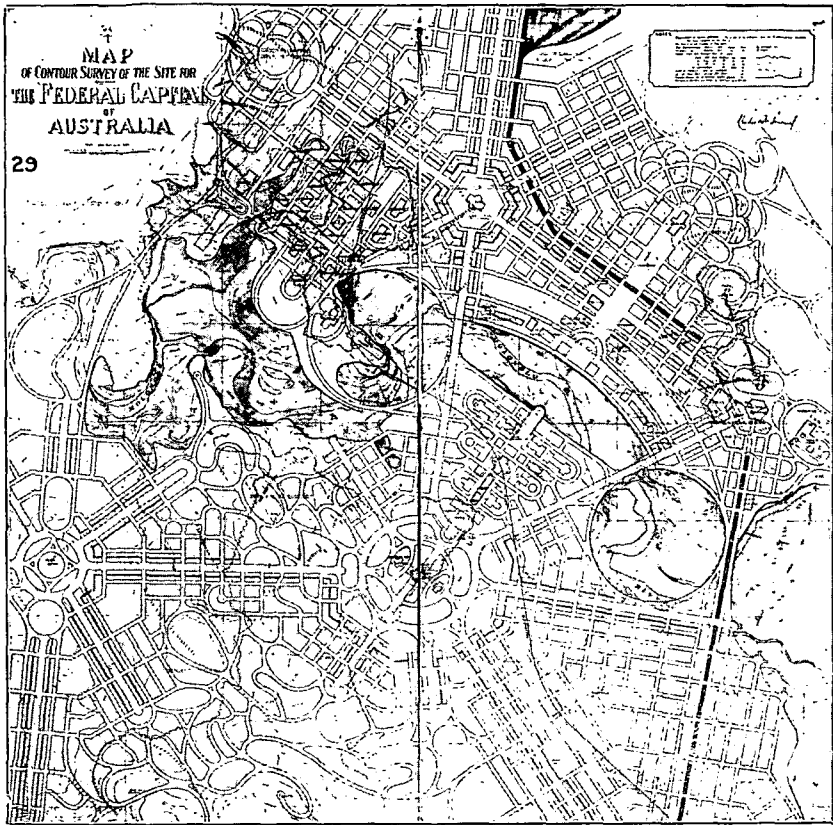
(v.) *Materials.* Steps are being taken with a view to the supply of local materials as far as possible. Shafts have been sunk and samples of shale, which it is thought will be suitable for the purpose of brickmaking, have been obtained. Tests of these samples have been carried out in Sydney and Melbourne with satisfactory results. The type of brick made is the machine-made brick, treated by the semi-dry process. A general plan for a brickmaking yard and sketch plans of buildings have been prepared, with a view to providing for further trials of the shale at the site tentatively selected. It is estimated roughly that ninety million bricks will be required for the public buildings; the delivery of these will probably be accomplished within six years after the erection of the brickworks, i.e., at the rate of fifteen million bricks per annum. It is stated that the volume of shale available is ample for these purposes. Further investigations are to be made as to the nature of the building stone available in the territory. Granite occurs in large quantity over a great part of the territory; none has yet been used for buildings, but it is probable that, with the demand created by the establishment of the capital city, suitable quarries will be opened, while the porphyritic rock which outcrops frequently will no doubt provide valuable stone for ornamental purposes. Stone for road-making is abundant and quarries will be located; sand for building construction and pottery clays will be sought for. The question of the manufacture of sand lime bricks from local materials is under investigation. A pipe-making plant has been purchased and installed to turn out all descriptions of compressed cement pipes from 4 in. to 24 in. diameter.

Portion of the first instalment of Australian timbers for use at the capital has been received and stored, so that when required it will be thoroughly seasoned.

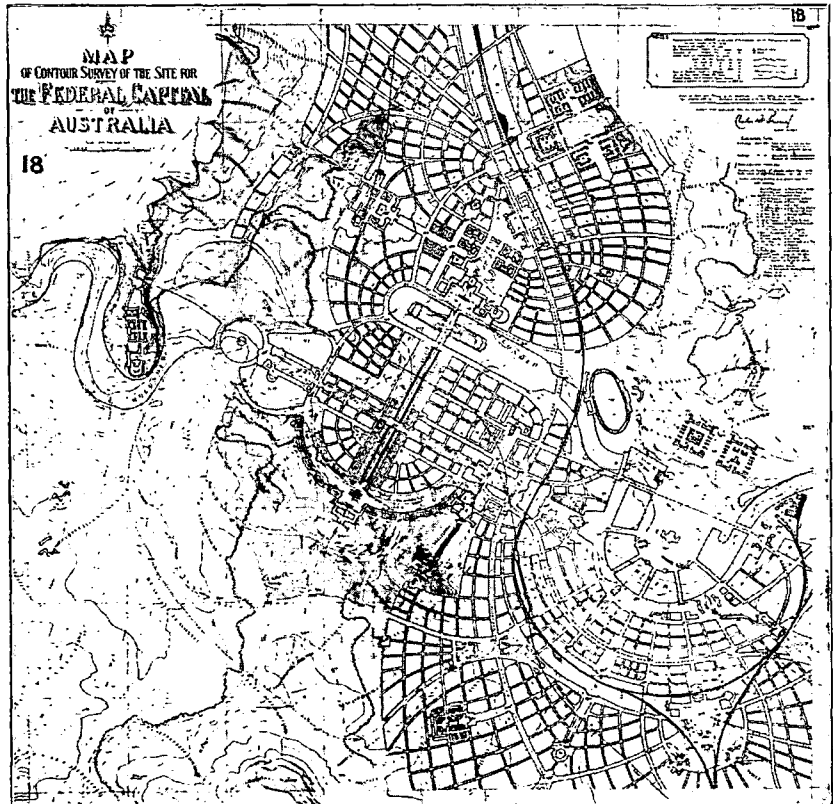
(vi.) *Power.* Power will be required in the early stages of the work for lighting, brickmaking, woodworking, pumping, possibly quarrying, and other purposes, and tenders have accordingly been called for the first unit of prime mover and generator in order to provide the necessary power. The project will be considered as part of a comprehensive scheme to be installed in units.

(vii.) *River Gauging.* Gauge weirs have been constructed on the Molonglo and Queanbeyan Rivers for the purpose of determining the available flow.



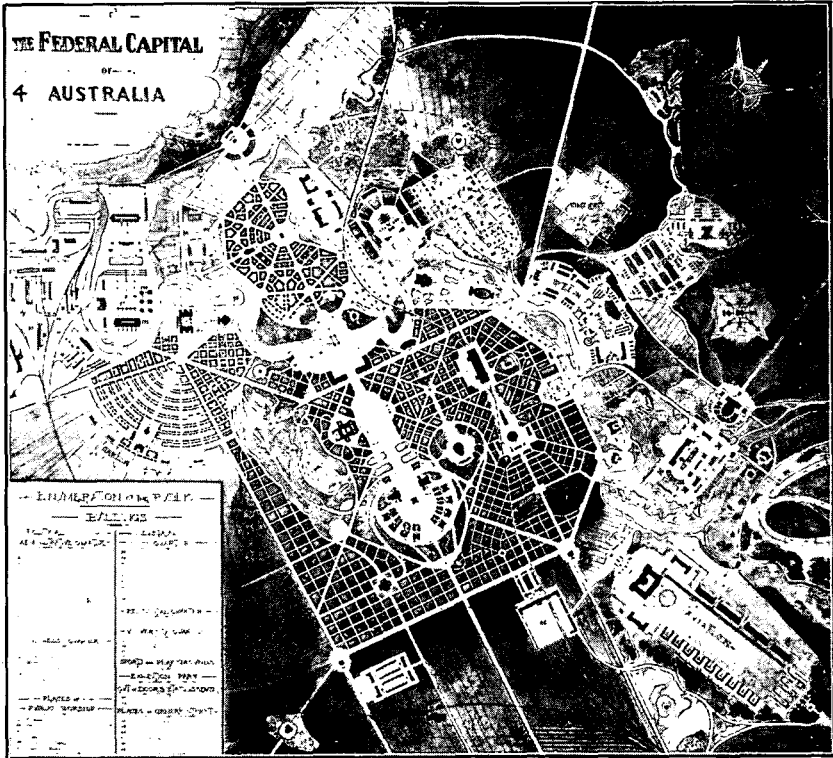


(NOTE.—A B is only the division between the two halves of the plan).



(For remarks see next page).

FEDERAL CAPITAL—PREMIATED DESIGNS FOR LAYING OUT CAPITAL CITY.  
(No. 4. awarded third Premium).



REMARKS.

The names and particulars attached to the premiated designs were as follows:—

DESIGN No. 29 awarded first Premium (see preceding page).

WALTER BURLEY GRIFFIN,  
Architect and Landscape Architect,  
Chicago, Illinois, U.S.A.

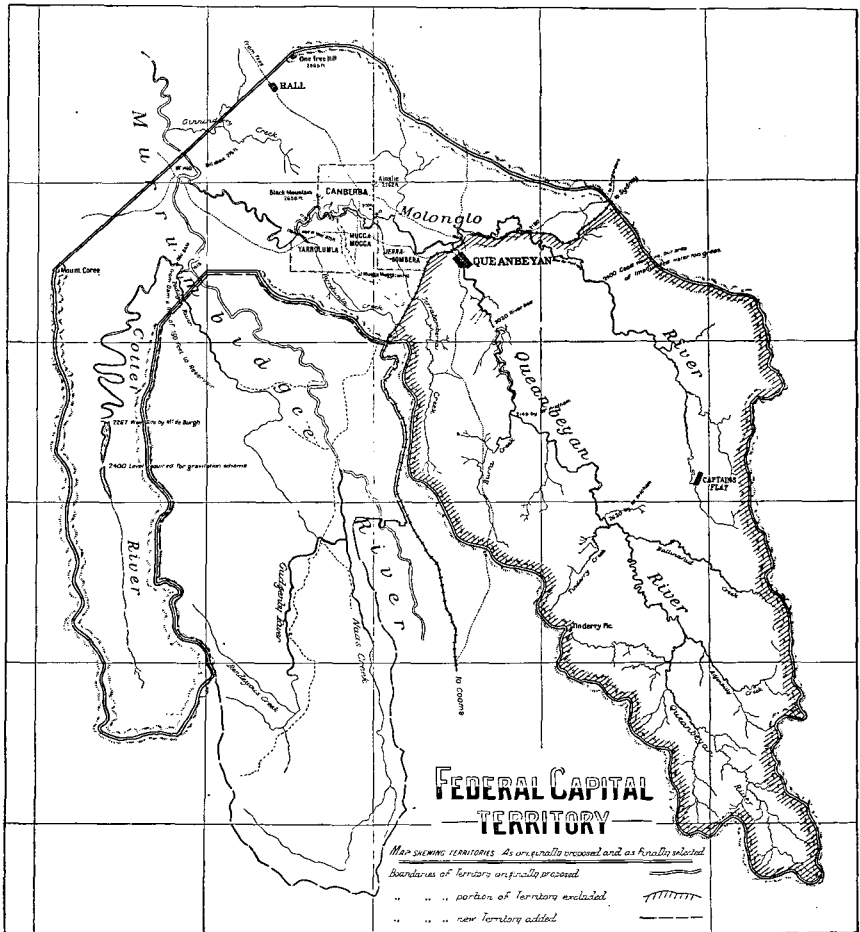
DESIGN No. 18 awarded second Premium (see preceding page).

ELIEL SAARINEN,  
Architect,  
Helsingfors, Finland,

DESIGN No. 4 awarded third Premium (see above).

D. ALF. AGACHE,  
Architect Diplômé par le Gouvernement Français,  
Professeur au Collège libre des Sciences Sociales,  
Paris, France.





**MAP**  
OF CONTOUR SURVEY OF THE SITE FOR  
**THE FEDERAL CAPITAL**  
OF  
**AUSTRALIA**

Scale: 500 Feet to an Inch

**NOTES**  
Representative Section (SHEET) is the portion of 25 columns and the Representative Section  
The map is a contour survey of the site for the Federal Capital of Australia, and is  
the property of the Commonwealth of Australia. It is not to be used for any other purpose  
without the permission of the Surveyor-General. The map is a contour survey of the site for  
the Federal Capital of Australia, and is the property of the Commonwealth of Australia. It is  
not to be used for any other purpose without the permission of the Surveyor-General.

Surveyed by photogrammetry, this drawing is based on the original of the Survey of the site for  
the Federal Capital of Australia, and is the property of the Commonwealth of Australia. It is  
not to be used for any other purpose without the permission of the Surveyor-General.

Surveyed under contract from the Minister of the Interior, by the Surveyor-General.

*John A. Smith*  
Surveyor-General

Revised by photoduplication from Drawing on Stone and Printed by the Department of Landscaping, New South Wales  
from original plan by P.J. Brumby, of the New South Wales Department of Landscaping

Revised under instructions from the Minister of State for State Affairs

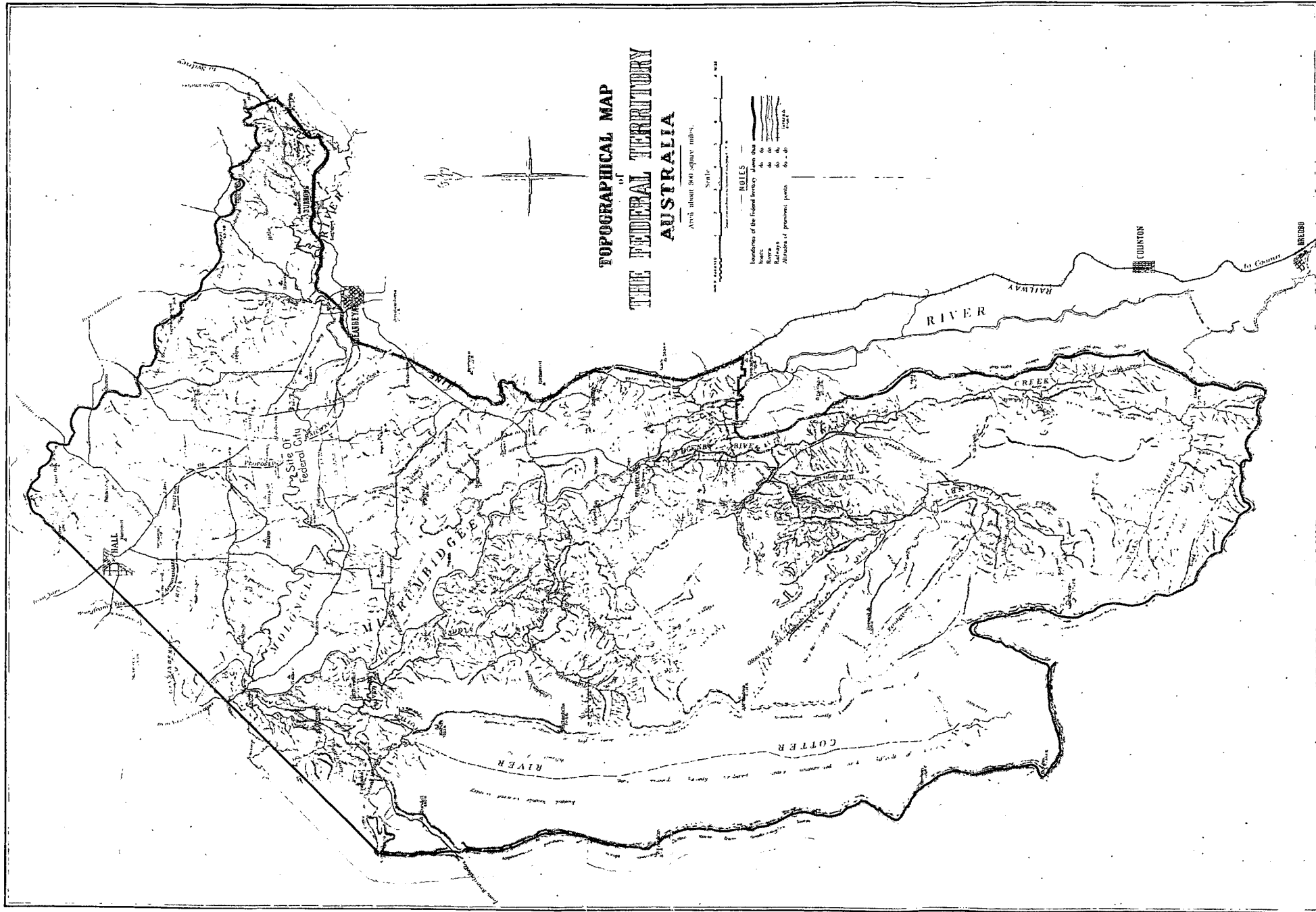
Charles R. Scribner

Army from 500 miles.

**NOTES**

boundaries of the Federal territory shown thus

Roadways  
Rivers  
Coastline  
Boundaries of provinces, towns,  
districts



2. **Probable Successive Stages of Works.**—A scheme, setting forth the proposed successive stages of the works involved in the establishment of the capital city, has been prepared by the Director-General of Works. Although the entire undertaking does not involve any one engineering work of great magnitude, it is necessary that the successive steps should be planned in such a manner that each may become a permanent step obviating temporary expedients. It is also necessary that the whole undertaking should be designed so that certain projects may initially form units or parts, which can be repeated or developed in course of time to meet increase of population. The probable stages in the evolution of the city, as set out hereunder, may overlap, and in some cases projects will continue through successive stages.

(i.) *First Stage. Transport, Materials, and Power.* Country roads and bridges; railway connection with Goulburn-Cooma line; brickworks; lime kilns; and timber (first instalment); generation and transmission of power for construction.

(ii.) *Second Stage. Hydraulic Engineering Works outside City Area.* Water-supply; storm-water drainage; sewerage outfall works; main sewer; sewerage district for workmen; timber (second instalment); railway bridge over the Molonglo River.

(iii.) *Third Stage. Engineering Works within the City Area preparatory to Occupation.* Street tunnels; power plant (permanent station and distribution; construction of housing for workmen; service reservoirs; and impounding weir on Cotter River.

(iv.) *Fourth Stage. Building Construction within the City and Completion of Engineering Works.* Public buildings (offices for use during construction); gasworks; compensating weir on Queanbeyan River; railway to Hall (Queanbeyan to Yass line); impounding weir on the Molonglo for ornamental water; erection of public offices and buildings; erection of Parliament House; completion of city roads.

3. **Outline of Principal Projects.**—A provisional scheme has been formulated setting out the sequence of most of the important projects involved in the building of the city, together with the estimated time necessary for their design and completion, and their approximate cost. There are, however, certain matters which cannot be dealt with even provisionally at present—such as bridges over the Molonglo River and the impounding weir on that river for ornamental purposes—since the location and height of these will depend upon the level of the waters provided for in the accepted designs for laying out the city. Other important works, *e.g.*, the compensating weir on the Queanbeyan River, street tramways, the railway to Jervis Bay, and refuse destructor, are not included in the scheme, since it is considered that they are not essential for the first years of occupation. The scheme provides, subject to the approval and the appropriation by Parliament of the necessary funds, for the completion of the designs and buildings ready for occupation within a period of eight years.

(i.) *Water Supply.* There are two aspects of this matter, *viz.*, one as regards workmen during construction, the other regarding the supply for the city. The former has already been referred to herein (see page 1145). It is proposed that a supply from the permanent source, the Cotter River, shall be provided before the time when there will be any considerable aggregation of workmen and dependents within the city area. In the meantime a supply of water will be provided for the men engaged on preliminary works, probably by pumping from the Molonglo River through sand filters into reservoirs. A weir has been erected on the Cotter River, and the discharge is determined by readings taken daily. The results of the records obtained shew that the mean daily flow between May, 1910, and December, 1910, was over 43,000,000 gallons; since that time it has increased to approximately 57,000,000 gallons daily, which is regarded as very satisfactory, taking into consideration the fact that the domestic and civic requirements of the city in its earlier years are estimated at only 2,500,000 gallons daily (based on a population of 25,000 at 100 gallons a day). A site for an impounding weir on the Cotter River

has been provisionally selected at a place about one mile from the confluence of that river and the Murrumbidgee, and at a level of about 1560 feet. It is estimated that a weir at that place, 70 feet in height, will impound 800 millions gallons of water; if the height were increased to 200 feet, the quantity impounded would be 4800 million gallons. Approval has been given to expend £2000 on investigations to determine the site of the weir. The results of the investigations which have so far been made under this approval are satisfactory. A permanent survey to determine the route of the road from the capital site to the Cotter River has been authorised, and a ford across the Murrumbidgee River has been constructed at a place about 200 feet above the confluence of the Cotter River. This ford provides easy access to the weir site, where, in the near future, extensive works will be carried out. The pipe line, after crossing the Murrumbidgee River, will lead to the pipe head reservoir on a hill near Mount Stromlo (2465 feet), thus necessitating a lift of about 800 or 900 feet. The proposed site for the service reservoir is at Red Hill (2300 feet), near the south-western boundary of the city site. It is proposed that the power for the pumping plant shall be transmitted electrically from the central power station.

(ii.) *Sewerage Scheme.* Various considerations demand that efficient measures should be taken to ensure the innocuous disposal of the sewage effluent. Any system adopted will involve land filtration, and the configuration of the country indicates the slopes of the Molonglo below (*i.e.*, to the west of) the city site as the most suitable place for sewage treatment works. It is proposed that a system of bacteriological treatment combined with broad irrigation shall be adopted.

Until the design for laying out the city is finally adopted, the lowest levels from which sewage will be taken cannot be determined, but it is stated that the engineering surveys, which have already been carried out, demonstrate that the areas available for irrigation by gravitation alone will be too small, and that pumping will be necessary. The lift required will, however, be small even to command a large irrigable area. The relative advantages of pumping the sewage or effluent are under consideration.

(iii.) *Power Supply and Distribution.* In distinction to a system under which independent power-generating units would be installed at various places—for example, at the sewage outfall works and at the pumping station at the Cotter—the adoption of a central station scheme is of importance. It is proposed that the permanent central station shall consist of two generating units each of 500 kilowatts, and one spare unit. Until a proper water-supply is provided, the permanent power station cannot be erected. In the meantime, since power supply is necessary in connection with preliminary works (see page 1146 hereinbefore), the first unit is to be installed in a temporary building on the bank of the Molonglo River, conveniently situated for condensing and feed water. When the permanent station is erected, the first unit will probably be moved from the temporary building and become part of the complete plant.

(iv.) *Buildings.* The scheme provides for the sequence of designs and for the erection of public buildings without intermission, including the Governor-General's residence, Courts of Justice, police buildings and gaol, administrative offices, military dépôt and offices, schools, observatory, medical and hospital buildings, railway station, Prime Minister's residence, accommodation for Members of Parliament, post office, Government printing office, and Town Hall. Other buildings will probably be erected within the first few years of, but not prior to, occupation, such as State House and necessary educational institutions. It has been decided that competitive designs should be invited for Parliament House after the design for laying out the city has been adopted.

The scheme provides for the design and erection of public buildings only. It is proposed that buildings for commercial and residential purposes should be constructed by private enterprise, at a time when the engineering and other works of the city are considered to be sufficiently advanced.



(v.) *Gasworks.* It is considered that gas-supply for cooking and heating will be essential, and that such a supply will also be utilised to a large extent for lighting purposes. It is proposed, therefore, to produce a gas of calorific value suitable for modern lighting, as well as for heating and power. On the basis of available statistics regarding towns having both electric and gas supplies, the consumption for 20,000 people, including town street lighting, will be 80 million cubic feet per annum.

(vi.) *Compensating Weirs on Queanbeyan and Molonglo Rivers.* The proposal to construct a weir to impound ornamental waters in the city site will entail the erection of compensating weirs on the Queanbeyan and Molonglo Rivers. It is considered that the construction of one of the latter weirs should preferably precede that of the impounding weir at the city, and that it would be advantageous to first construct the weir on the Queanbeyan River. The area of the ornamental water will presumably be determined by the accepted city design, but in any case a constant flow of water will be required to maintain a definite level and to avoid so far as possible still waters in any arms or bays. The evaporation losses, deduced from the data obtained at Lake George, will be considerable, as also will be the loss by soakage. The requisite flow cannot be definitely stated until the extent of ornamental water is determined.

(vii.) *Other Matters.* Other matters (in addition to the foregoing and to the preliminary measures specified in paragraph 1 hereof) dealt with in the scheme comprise lime-kilns, storm-water drains, military college, street tunnels, and city streets.

4. **Military College of Australia.**—On the 27th June, 1911, a Military College was opened by the Governor-General at Duntroon, near the eastern boundary of the capital city area, for occupation by the cadets and staff. Particulars regarding the establishment of this College may be found in Year Book No. 4 (p. 1159). Further information is given in the section of this book dealing with Defence (see p. 1087 hereinbefore).

5. **Designs for the Capital City.**—In 1911 the Commonwealth Government invited competitive designs throughout the world for laying out the capital city, with the object of embodying in the construction of the Federal capital the most desirable features from the standpoint of general efficiency for its purposes, of engineering, hygiene, etc. The city will be the permanent seat of Government of the Commonwealth, the place at which the Federal Parliament will meet, where all Commonwealth legislation will be enacted, and where the Governor-General will have his official residence. It will therefore be primarily the official centre of the Commonwealth.

The creation of a capital is a unique opportunity, and it is hoped to reflect in the designs thereof the finest features of modern cities. The Commonwealth will have, as a precedent in the undertaking, the whole experience of the past in architecture and city planning. With the object of inducing experts of world-wide celebrity and reputation to place their talents at the disposal of the Commonwealth Government, it was decided to award premiums of £1750, £750, and £500, respectively, for the three designs considered most meritorious. In response to the invitation thus issued 149 designs were received; these were submitted to a board for investigation and the Minister for Home Affairs has finally adjudicated upon the three premiated designs. The board referred to consisted of three members, viz.:—J. M. Coane, Esq., licensed surveyor, Melbourne; J. A. Smith, Esq., engineer, Melbourne; and J. Kirkpatrick, Esq., architect, Sydney. The last two members submitted a report making recommendations as to the designs for which the premiums should be awarded, and these recommendations were adopted by the Minister for Home Affairs. The first-named member of the board recommended, in a minority report, that the premiums should be paid for three designs, none of which was included in the report of the other two members of the board. The three premiated designs are reproduced on pages 1147 and 1148 hereof, and explanatory notes may be found on the latter page.

## SECTION XXXII.

### THE NORTHERN TERRITORY.

#### § 1. Area and Population.

1. **Introductory.**—Upon the extension of New South Wales westward to the 129th meridian in 1827, the Northern Territory was comprised within that colony (see Year Book No. 4, page 16), and in 1863 was annexed by Royal Letters Patent to the province of South Australia. With the adjacent islands, it was transferred to the Commonwealth on 1st January, 1911.

2. **Area and Boundaries.**—The total area of this Territory is 523,620 square miles, or 335,116,800 acres. Its length from north to south is about 900 miles, while its breadth from east to west is 560 miles. Its eastern boundary, dividing it from Queensland, is the 138th meridian of east longitude; and its western boundary, the 129th meridian, separating it from Western Australia. Its southern boundary is the 26th parallel of south latitude, dividing it from South Australia. The northern boundary is the coast line of those parts of the Indian Ocean known as the Timor and Arafura Seas. Near the mouth of the Wentworth River, in the Gulf of Carpentaria, the coast line is met by the eastern boundary; at Cape Domett, near Cambridge Gulf, the western boundary cuts the northern coast line. The length of coast line is about 1040 miles, or 503 square miles of area to one mile of coast line; an exact survey has, however, not yet been made.

3. **Population.**—(i.) *Character.* In 1881 there were 670 Europeans in the Territory, and at the end of 1910 the number had increased to 1182, the proportion of children having also become much larger. The Chinese population, at its maximum during the years of railway construction, 1887 and 1888, has gradually dwindled, the total in 1910 being 1387. Japanese, first recorded in 1884, increased up to the year 1898, falling again after five years. The highest recorded population, excluding aborigines, was 7533 in 1888; that for 1910 was 2846. The following table shews population for thirty years, distinguishing Europeans, Chinese, and Japanese:—

**POPULATION OF NORTHERN TERRITORY (EXCLUSIVE OF ABORIGINES),  
1881 to 1910.**

Year.	Europeans.				Chinese.				Japanese.		Other Nationalities.				Total Population
	Adults.		Children.		Adults.		Children.		Adults.		Adults.		Children.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1881 ...	550	85	23	12	2,730	4	—	—	—	—	31	—	—	—	3,435
1882 ...	607	123	39	28	2,569	10	4	3	12	—	48	—	—	—	3,443
1890 ...	714	165	71	59	4,048	45	27	21	33	10	137	13	16	7	5,366
1891 ...	728	124	190	102	3,461	43	106	48	27	6	39	5	13	6	4,898
1895 ...	630	112	95	43	3,338	52	28	25	40	11	35	27	17	14	4,467
1900 ...	609	147	160	87	2,790	58	41	39	158	21	140	21	18	13	4,302
1901 ...	604	156	180	115	2,471	57	79	83	134	15	121	25	30	26	4,096
1902 ...	606	159	166	107	2,341	41	65	69	174	13	92	14	15	11	3,873
1903 ...	600	169	169	115	2,097	31	59	67	151	14	93	15	17	13	3,610
1904 ...	630	182	167	118	1,987	31	58	67	161	21	91	15	15	14	3,557
1905 ...	641	188	170	124	1,867	22	44	50	141	11	79	14	13	10	3,374
1906 ...	630	170	162	113	1,767	20	47	44	121	10	86	13	14	11	3,208
1907 ...	650	174	158	128	1,724	20	46	43	108	9	74	9	13	10	3,166
1908 ...	577	188	175	141	1,518	18	55	38	115	8	102	10	15	13	2,973
1909 ...	804	170	169	131	1,396	8	43	28	126	7	93	11	15	13	3,014
1910 ...	739	166	157	120	1,315	10	37	25	125	7	107	10	15	13	2,846

(ii.) *Movement of Population.* The following is a summary of movement of population in 1910 :—

**MOVEMENT OF POPULATION, NORTHERN TERRITORY, 1910.**

Europeans—		Europeans—		Excess—	
Inwards, oversea	290	Outwards, oversea	383	Emigration over	
Births ...	17	Deaths ...	42	immigration ...	168
Others—		Others—		Deaths over births	17
Inwards, oversea	163	Outwards, oversea	238		
Births ...	42	Deaths ...	34		
Increase ...	512	Decrease ...	697	Net loss ...	185

The census population (3rd April, 1911) was 2734 males and 576 females, total 3310; the estimate for 31st December, 1911, was 2662 males, 586 females, total 3248.

The immigration and emigration of the Territory from 1880 to 1910 is shewn in the following table :—

**MIGRATION, NORTHERN TERRITORY, 1880 to 1910.**

Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.
1880* ...	2,759	273	1891 ...	442	657	1901 ...	338	355
1881 ...	354	1,135	1892 ...	505	549	1902 ...	354	543
1882 ...	949	616	1893 ...	335	381	1903 ...	421	701
1883 ...	762	582	1894 ...	223	410	1904 ...	520	575
1884 ...	763	790	1895 ...	453	356	1905 ...	578	758
1885 ...	855	664	1896 ...	553	362	1906 ...	457	623
1886 ...	2,795	2,416	1897 ...	541	611	1907 ...	595	637
1887 ...	3,667	1,409	1898 ...	637	522	1908 ...	510	652
1888 ...	1,563	1,025	1899 ...	461	372	1909 ...	544	592
1889 ...	695	1,514	1900 ...	346	392	1910 ...	453	621
1890 ...	488	886						

\* From 17th August to end of year.

(iii.) *The Aborigines.* An account of the Australian aborigines, by Dr. W. Ramsay Smith, was given in Year Book No. 3 (pp. 158-176). The interior of the continent is the most thickly populated by the native, but it is believed that they are rapidly dying out. In these regions, remote from contact with other races, the native has maintained his primitive simplicity, and furnishes an interesting subject of study to the anthropologist and ethnologist. At the census of 1911, full-blooded aborigines in the employ of whites, and those who were living in a civilised or semi-civilised condition in the vicinity of European settlements, were enumerated—the males being 743, females 480; total, 1223. It has been estimated that the total black population of the Territory is upwards of 20,000.

## § 2. Historical.

1. *Exploration and Colonisation.*—(i.) *Coastal Surveys.* The coast was surveyed by King in 1817, and by Wickham and Stokes in 1838 and 1839. Port Darwin, the site of Darwin, the present capital, was discovered in the latter year.

(ii.) *Exploration of Interior.* Leichhardt traversed a great deal of the country in 1844-5, journeying from Queensland to Port Essington. Gregory started from Point Pearce in 1855, and reached Brisbane. Minor explorations were also successfully undertaken.

(iii.) *Crossing the Continent.* In 1861, Stuart began his transcontinental journey from Adelaide, and reached the north coast in July, 1862. His track has become the main route, and along it the telegraph line is constructed.

(iv.) *Demarcation of Boundaries.* Upon the extension westwards of New South Wales, in 1827, the Territory was included in that colony, and remained so until 1863, when it was added to South Australia, which in 1836 had been created a separate province.

(v.) *The Military Settlement.* A military post was formed on Melville Island in 1825. This was transferred in 1827 to Raffles Bay, and a few years later to Port Essington. Little public attention was given to the station, and no attempt at colonisation was made. It was abandoned in 1849.

**2. Control by South Australia.**—(i.) *Transfer.* As a result of representations to the Imperial Government by South Australia, the Territory was incorporated with that State in 1863, and administered through a Government Resident located at Port Darwin up to 31st December, 1910. Early attempts at settlement failed. Ultimately, Port Darwin was chosen for the site of the capital, and Palmerston founded.

(ii.) *Land Legislation.* The South Australian Government's land legislation was framed to attract settlers, viz., low rents with easy entry and unencumbered holding over long periods; or grant of fee simple at low price. Special arrangements were made to foster tropical agriculture, including the establishment of botanic gardens at Port Darwin, for observation and experiment. Large "runs" were established on the northern well grassed and watered pastures.

(iii.) *Mining.* The survey and construction of the overland telegraph revealed the auriferous nature of the country, and gold and other minerals were discovered in various localities. The Government regulated the area of claims and the conditions upon which they were held.

(iv.) *Cessation of Supervision by South Australia.* Progress has not been as marked as was desired, the Territory being thought capable of more rapid development. Accordingly the Federal and State Governments agreed upon a surrender by the latter as from 1st January, 1911, since which date the Territory has been a dependency of the Commonwealth.

**3. Transfer to Commonwealth.**—(i.) *The Agreement.* An agreement of transfer, afterwards ratified by the respective Parliaments, was made between the two Governments. In accordance with a proclamation issued in the terms of the Commonwealth Acceptance Act (No. 20 of 1910), the transfer was effected on 1st January, 1911.

(ii.) *The Northern Territory Acceptance Act.* By the Commonwealth Act, the agreement is ratified and approved, the Territory is accepted together with the Palmerston and Pine Creek Railway; laws and courts of justice remain in operation, powers and functions of magistrates and officials remain vested; estates and interests continue upon the same terms; trade with Australian States is declared free. The Commonwealth assumes responsibility for the State loans in respect of the Territory, paying the interest yearly to the State, providing a sinking fund to pay off the loans at maturity,

and paying off the deficit in respect of the Territory. It also purchase the Port Augusta to Oodnadatta railway, and agrees to complete the construction of the trans-continental railway from Port Darwin to Port Augusta.

(iii.) *The South Australian Surrender Act.* The State Act approves and ratifies the agreement surrendering the Territory.

(iv.) *The Northern Territory (Administration) Act 1910.* The Act provides for Government authorising the appointment of an administrator and officials. South Australian laws are declared to continue in force as laws of the Territory and certain Commonwealth Acts to apply. Power is given to the Governor-General to make Ordinances having the force of law.

(v.) *Administration.* A Resident Administrator, vested with supreme authority in internal affairs, was appointed in the Department of the Minister for External Affairs in February, 1912. Many other important administrative offices have also been filled.

(vi.) *Legislation.* (a) *Ordinances passed.* The following Ordinances have been made :—

1911—No. 1, Northern Territory Government; No. 2, Council of Advice; No. 3, Sheriff; No. 4, Tin dredging; No. 5, Marine; No. 6, Registration of Births, Marriages, and Deaths; Nos. 7 and 15, Interpretation; No. 8, Stamp Duties Abolition; No. 9, Supreme Court; Nos. 10 and 12, Registration; No. 11, District Council Assessment; No. 13, Fisheries; No. 14, Land Acquisition; No. 16, Aborigines.

1912—No. 1, Native Birds' Protection; No. 2, District Council Assessment; No. 3, Crown Lands.

(b) *Main Provisions of the Ordinances.* The powers and duties of the Administrators vested in the appointee, include custody of the public seal, appointment and suspension of officials, and execution of leases of Crown lands. He is assisted by a council of advice, not exceeding six, and meeting monthly. A Supreme Court with original and appellate jurisdiction is instituted. A Sheriff and a Registrar-General are provided for, also the registration of births, marriages and deaths, and of deeds and documents. Stamp duties are abolished. District Councils are authorised to assess land values and levy rates on unimproved value. Custody and control of aborigines with extensive powers of supervision are vested in the Chief Protector. Native birds may be declared protected. Crown lands are classified, and their mode of acquisition, entry and holding defined.

### § 3. Physiography.

1. *Tropical Nature of the Country.*—The Territory is within the torrid zone, with the exception of a strip  $2\frac{1}{2}$  degrees wide, which lies south of the Tropic of Capricorn.

2. *Contour and Physical Characteristics.*—The low flat coast line seldom reaches a height of 100 feet. Sandy beaches and mud flats, thickly fringed with mangroves, prevail. Sandstone, marl, and ironstone form the occasional cliffy headlands. The sea frontage of more than 1000 miles is indented by bays and inlets and intersected by numerous rivers, many of which are navigable for considerable distances from their estuaries.

The principal features of the coast line are enumerated in Year Book No. 1, p. 66; the rivers in Year Book No. 2, p. 76; the mountains in Year Book No. 3, p. 67; the lakes in Year Book No. 4, p. 77; and the islands in the present volume, pp. 71, 72.

Inland, the country is generally destitute of conspicuous landmarks. From the coast there is a general rise southwards to the vicinity of the 17th or 18th parallel of

south latitude, where the higher lands form the watershed between the rivers that flow northwards to the sea, and those that form the scanty supply of the interior systems. Towards the centre of the continent the land over a wide area is of considerable elevation, and there are several mountain ranges, generally with an east and west trend.

#### § 4. Climate.

On the northern coast, as in the tropics generally, there are two main climatic divisions—the wet season, November to April; and the dry season, May to October. The changes of season are uniform and regular. Immediately after the vernal equinox, the wet season is heralded by the cessation of the east-south-easterly monsoon, which gives place to calms and light variable winds. Intensely hot weather prevails for a few days, thunder-clouds gathering and increasing daily until they burst in heavy thunderstorms accompanied by hurricanes, and increasing in strength and frequency until the end of November, when they become of almost daily occurrence, about an inch of rain falling during each storm. During December the north-west monsoon sets in gradually, with rain nearly every day, and increasing in force until about the end of January. At this period of the year the wet season penetrates into the heart of the continent. This monsoon dies away at the autumnal equinox, and is succeeded by light and variable winds till the end of April, when the dry season commences with the setting in of the south-east monsoon. Nearly the whole of the rainfall occurs in the summer months.

#### § 5. Fauna and Flora.

1. **Native Animals.**—The ordinary types of Australian fauna inhabit the territory. As elsewhere on the continent, the higher *Theria* are rare. There are many genera of marsupials, and individuals are numerous. The birds also are typically Australian, having brilliant plumage, and not generally gifted with song. Crocodiles and fresh-water tortoises frequent the northern rivers. There are some species of snakes, mostly non-venomous, the most numerous being the harmless python. Frogs abound, the water-holding frog being common in Central Australia. The rivers contain many varieties of freshwater fish. The molluscan fauna of the coast are mostly carnivorous, the vegetable feeders being very poorly represented, probably on account of the dearth of seaweed. Land and freshwater shellfish are not abundant. Among insects, many beautiful butterflies thrive in the warm damp atmosphere. Beetles also are strongly represented. The white ant is a pest, very few timbers being immune from its ravages. Anthills in the Territory sometimes attain a height of twenty-five feet and a diameter of ten feet. Another destructive insect, particularly active and mischievous inland, is the borer. Mosquitoes and sandflies are very troublesome, particularly from January to April. There are not many crustaceans.

2. **Imported Stock.**—Buffalo thrive in the Territory. At Port Essington they are numerous, and there are large herds on Melville Island. Timor ponies have also been introduced. Imported sheep and horned cattle thrive on the stations.

3. **Protection of Fauna.**—Ruthless destruction of native birds is prohibited. An ordinance (No. 1 of 1912) gives the Administrator power to declare that any bird is protected; and provides that permits to export protected birds, or the skins or eggs of such birds, will only be issued subject to such conditions as the Administrator directs.

4. **Flora.**—The vegetation is tropical, many of the forms belonging to the Malayan and Oceanic regions. The timber trees are not of great commercial value, but in the coastal regions tropical vegetation grows luxuriantly to the water's edge. The indented arms of the coast are thickly fringed with the mangrove. On the ranges, pines, fig trees, and orange trees flourish. The Roper River drains extensive forest lands. Leichhardt

pinces and palms form the vegetation of the tableland, which stretches across the Territory about the 14th degree of south latitude. On the higher steppes there are a few varieties of eucalyptus, and many fibre plants are also indigenous. On the wide expanses of plain country of the interior, there is little vegetation, tree growth being very scanty, consisting chiefly of stunted eucalypts, such as the gimlet gum, black box, and desert sheoak. In the north-western districts there is an almost entire absence of lichens and mosses, though ferns are plentiful in the vicinity of the Victoria River. The following orders are well represented:—*Euphorbiaceæ*, *Compositæ*, *Convolvulaceæ*, *Rubiaceæ*, *Goodeniaceæ*, *Leguminosæ*, *Urticæ*.

## § 6. Production.

The table of exports hereunder indicates the principal productions of the Territory, since there is no great home consumption.

1. **Stock.**—The spacious, well-grassed “runs” of the Territory are suitable for horse and cattle breeding. It is anticipated that the cattle trade with the East will develop. Large numbers are overlanded to neighbouring States, which also take considerable quantities of horse hides. The number of stock on 31st December, 1910, was:—

### LIVE STOCK, NORTHERN TERRITORY, 31st DECEMBER, 1910.

Horses.		Cattle.		Sheep.		Pigs.
24,509	...	513,383	...	57,240	...	996

Dairying as an industry is non-existent. The abundant indigenous herbage is, however, well suited for stock, and the making of hay and ensilage would ensure the development of the industry.

2. **Mining.**—Considerable quantities of the precious and commercial metals are mined. The discovery of gold and tin in various localities, and the measure of success that has attended their working, indicates scope for development.

(i.) *Mineral production, 1910.* The gold production in 1910 was:—

### GOLD RAISED, NORTHERN TERRITORY, 1910.

From Batteries.		From Cyanide Works.		Alluvial and Dollied Gold.		Total.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
ozs.	£	ozs.	£	ozs.	£	ozs.	£
3,614	12,649	2,424	4,662	1,100	4,400	7,138	21,711

The principal other minerals raised in 1910 were:—

### OTHER MINERALS RAISED, NORTHERN TERRITORY, 1910.

Copper Ore.		Wolfram Ore.		Tin Ore.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Tons.	£	Tons.	£	Tons.	£
97	1,196	70	6,686	364	31,113

(ii.) *Mineral Production, 1894 to 1910.* The following table shews the total mineral production for 17 years. No company mined for tin, silver lead or wolfram during this period:—

**VALUE OF MINERAL PRODUCTION, NORTHERN TERRITORY, 1894 to 1910.**

Year.	Gold Bullion.	Tin Ore.	Wolfram.	Silver Lead.	Copper Ore.	Smelter Product (C'pp'rBase)	Total Value.
	£	£	£	£	£	£	£
1894 ...	107,708	1,251	...	115	1,204	...	110,278
1895 ...	101,325	1,815	...	...	410	...	103,550
1896 ...	73,679	530	...	1,230	...	...	75,439
1897 ...	63,266	10	...	...	...	...	63,276
1898 ...	79,988	100	...	...	...	...	80,088
1899 ...	60,648	180	...	...	...	...	60,828
1900 ...	61,089	774	...	522	14,095	...	76,480
1901 ...	61,187	2,105	175	20	2,345	...	65,832
1902 ...	61,379	5,985	...	...	1,813	...	69,177
1903 ...	41,629	10,773	...	...	55	...	52,457
1904 ...	40,926	27,360	2,500	1,386	...	27,029	99,201
1905 ...	47,246	25,877	2,573	1,303	6,677	9,659	93,335
1906 ...	33,637	33,837	7,144	2,355	13,154	35,606	126,077*
1907 ...	18,279	41,365	11,451	2,093	13,143	1,888	88,219
1908 ...	21,095	35,876	1,925	30	5,413	2,555	67,194†
1909 ...	24,148	32,741	4,105	...	1,400	2,342	64,736
1910 ...	21,711	31,113	6,686	...	1,196	...	60,706

\* Includes Santalite valued at £140, and Amblygonite valued at £204. † Includes Bismuth valued at £300.

(iii.) *Employment of Miners, 1894 to 1910.* The following table shews employment in mining for seventeen years, distinguishing Chinese:—

**MINERS, NORTHERN TERRITORY, 1894 to 1910.**

Year.	Europeans.	Chinese.	Total.	Year.	Europeans.	Chinese.	Total.
1894 ...	65	2,055	2,120	1903	91	1,202	1,293
1895 ...	111	2,032	2,143	1904	189	1,158	1,347
1896 ...	193	1,678	1,871	1905	161	1,077	1,238
1897 ...	153	1,633	1,786	1906	179	1,018	1,197
1898 ...	107	1,456	1,563	1907	208	958	1,166
1899 ...	114	1,372	1,486	1908	150	674	824
1900 ...	72	1,432	1,504	1909	190	630	820
1901 ...	58	1,280	1,338	1910	140	602	742
1902 ...	47	1,160	1,207				

(iv.) *Mining Accidents, 1900 to 1910.* There were no injuries received in mining in 1910. During the ten years preceding, ten fatal accidents and eight cases of serious injury were recorded.

3. **Pearl Shell.**—In 1884 mother-of-pearl shell was discovered in the harbour of Port Darwin. Difficulty in working, principally through heavy tides and muddy water, retarded the development of the industry for many years. Latterly, however, the opening up of new patches has led to a revival. In 1910, thirty-six boats were engaged, valued, with their equipment, at £10,900; 216 men were employed. Fifty-five tons of pearl shell were obtained, valued at £10,030. Bêche-de-mer valued at £1303 was also raised.



## § 7. Commerce and Shipping.

1. **Trade.**—The following table shews the total trade of the Territory for the past 10 years :—

## VALUE OF IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1901 to 1910.

—	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£
Imports ...	108,886	107,217	125,244	113,461	86,878	74,659	78,996	68,905	57,994	52,398
Exports ...	302,931	191,558	178,266	235,650	216,279	254,222	345,721	241,028	278,555	269,063
Total Trade	411,817	298,775	303,510	349,111	303,157	328,881	424,717	309,933	336,549	321,461

From 1881 to 1910, the annual average trade in five-year periods was :—

## VALUE OF IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1881 to 1910.

Period.	Average Annual Imports.	Average Annual Exports.	Period.	Average Annual Imports.	Average Annual Exports.
	£	£		£	£
1881-1885	125,600	92,727	1896-1900	127,489	158,978
1886-1890	236,099	113,156	1901-1905	108,337	224,937
1891-1895	109,704	177,463	1906-1910	66,590	277,718

2. **Principal Exports.**—The principal articles of export during the last three years were :—

## PRINCIPAL ARTICLES OF EXPORT, NORTHERN TERRITORY, 1908 to 1910.

Year.	Wolfram		Copper.		Cattle.		Bêche-de-mer.		Tin Ore.		Gold.		Dried Fish.		Horses.	
	Qua.	Val.	Qua.	Val.	No.	Value.	Qua.	Val.	Qua.	Val.	Qua.	Val.	Qua.	Val.	No.	Val.
1908	tons	£	tons	£		£	tons	£	tons	£	ozs.	£	lbs.	£		£
1909	8	542	413	5,020	31,636	142,998	24	1,272	447	35,990	7,074	22,425	83,944	1,697	1,459	14,395
1910	44	4,294	143	2,337	26,783	121,172	38	1,906	416	32,306	7,164	23,526	63,605	1,091	83	525
	65	7,081	124	1,113	38,326	161,605	30	1,303	351	34,308	6,713	21,632	33,672	591	829	14,070

Year.	Pearl Shell.		Hides and Horns.	Wool.		Tortoise Shell.		Copper Matte.	
	Qua.	Value.	Value.	Quantity.	Value.	Qua.	Value.	Qua.	Value.
	tons.	£	£	lbs.	£	lbs.	£	tons.	£
1908 ...	58	7,578	4,831	148	6	251	159	78	1,949
1909 ...	58	10,085	6,586	142	3	376	350	11	300
1910 ...	55	10,030	3,816	213,964	5,915	222	160	124	2,989

3. **Shipping.**—The Territory's oversea commerce is carried in British and Japanese bottoms. One of the British lines maintains a monthly service, other lines are irregular. Coastal shipping is chiefly in Australian vessels. There is a small local trade, a steamship running between Port Darwin, Port McArthur, Daly River, Victoria River, and Wyndham (Western Australia). The shipping of Port Darwin in 1910 was :—

## SHIPPING, PORT DARWIN, 1910.

Particulars.	Entered.			Cleared.			Total.		
	Vessels	Tons.	Crews.	Vessels	Tons.	Crews.	Vessels	Tons.	Crews.
Oversea direct— Steam	47	79,767	3,652	43	72,430	3,291	90	152,197	6,943
Interstate—Steam	36	55,082	2,390	40	63,196	2,778	76	118,278	5,168
Local (within the Ter'ty)—Steam	9	560	68	8	379	59	17	939	127
Sailing	35	373	129	33	379	120	68	752	249
Total	127	135,782	6,239	124	136,384	6,248	251	272,166	12,487

4. **Shipping, 1881 to 1910.**—The average annual shipping of the Territory from 1881 to 1910 is shewn below in 5-year periods :—

## SHIPPING, NORTHERN TERRITORY, 1881 to 1910.

Period.	Arrivals.		Departures.	
	Average Yearly No. of Vessels.	Average Annual Tonnage.	Average Yearly No. of Vessels.	Average Annual Tonnage.
1881—1885 ...	72	71,814	72	71,692
1886—1890 ...	95	94,452	103	94,724
1891—1895 ...	75	81,128	73	81,090
1896—1900 ...	71	88,284	70	88,244
1901—1905 ...	63	93,751	63	91,556
1906—1910 ...	87	128,502	88	128,408

## § 8. Internal Communication.

1. **Railways.**—Under the agreement ratified by the Act the Commonwealth is to construct the Northern Territory portion of the transcontinental railway line (connecting Adelaide and Port Darwin, *via* Port Augusta).

The Northern line from Adelaide terminates at Oodnadatta, about 100 miles south of the southern boundary of the Territory. The only line at present in the Territory is one from Port Darwin to Pine Creek, a length of 145½ miles, of 3 ft. 6 in. gauge; and Pine Creek is distant about 1140 miles from Oodnadatta. It is stated that this transcontinental railway would bring London within seventeen days of Adelaide. The Commonwealth also acquired on 1st January, 1911, the property in the line from Port Augusta to Oodnadatta; but the line is at present being worked under the control of the South Australian Railway Commissioner, by agreement between the Commonwealth and South Australian Governments.

2. **Posts.**—The principal mail services are as follows:—

(i.) **Marine.** Postal communication is maintained between Sydney, Melbourne, and Adelaide, *via* North Queensland ports. The service extends to China and Japan. There are three lines of service—two of the shipping companies being British, and one Japanese. The two former are subsidised at poundage rates, the latter at Postal Union rates. One of the British services is monthly, the others are irregular. There is also a quarterly contract service between Port Darwin and Boroloola, calling half-yearly at Roper River; and a service every two months between Port Darwin and Wyndham, on the estuary of Ord River, in the north-east of Western Australia. These are subsidised

Other inland routes are served, and there is a frequent service in Port Darwin.

Between Port Darwin and Banjoewangie the submarine cable is duplicated.

## § 9. Finance.

### REVENUE AND EXPENDITURE, NORTHERN TERRITORY, 1910-11.

REVENUE.	£	EXPENDITURE.—cont.	£
Customs and Excise...	12,366	Law Officers—	
Postal, Telegraph & Telephone	2,691	Salaries and contingencies...	877*
Railways ...	5,567*	Marine Office—	
Territorial ...	3,389*	Salaries and contingencies...	353*
Miscellaneous ...	1,565*	Stock and Brands—	
Credit Balance Northern Territory funds at 31/12/10, paid by State of South Australia	151,513	Salaries and contingencies...	23*
Deficiency on year ...	166,856	Botanic Gardens—	
		Salaries and contingencies...	299*
		Survey—	
		Salaries and contingencies...	176*
	343,947	Goldfields and Mining—	
		Salaries and contingencies...	5,425*
		Education—	
		Salaries and contingencies...	304*
EXPENDITURE.		Railways—	
Trade and Customs—		Salaries and contingencies...	5,882*
Salaries and contingencies ...	1,705	Works and Buildings ...	4,838*
Rent, Repairs, etc.	98	Miscellaneous ...	5,471*
Postmaster-General—		Administrative Office—	
Salaries and contingencies ...	11,360	Salaries and contingencies...	167*
Mails ...	4,412	Payment into Trust fund,	
Rent, Repairs, etc.	25	Mineral account ...	1,000*
Administrator's Office—		Interest and Redemption (excluding Port Augusta railway)—	
Salaries and contingencies ...	1,610*	Interest on loans ...	13,976*
Aboriginal Affairs—		Contribution to sinking fund	4,617*
Salaries and contingencies ...	108*	Redemption of loans ...	273,250*
Police—			
Salaries and contingencies ...	4,388*		
Gaol—			
Salaries and contingencies ...	885*		
Charitable Institutions—			
Salaries and contingencies ...	2,678*		
Board of Health—			
Salaries ...	20*		
			343,947

\* From 1st January, 1911, only.

The Commonwealth received £151,513 from South Australia, being the credit balance of Northern Territory funds, but assumed responsibility for interest on loans and redemptions, which, for the half-year ended 30th June, 1911, amounted to £291,844. The deficiency on the date named was thus £166,856.

2. **Loans.**—The first loan on Northern Territory account was floated in London in 1876; the nominal amount was £75,000, at 4 per cent., due date 1st January, 1916. The public debt on 30th June, 1911, was £3,657,836; the total nominal amount of loans raised being £4,611,836, and £954,000 having been repaid. The following is a summary:—

**PUBLIC DEBT, NORTHERN TERRITORY, 30th JUNE, 1911.**

Principal. £		Rate. %		Annual Interest. £
27,216	...	3	...	817
154,992	...	3½	...	5,423
71,945	...	£3 12s. 3d.	...	2,599
1,798,383	...	3½	...	67,439
1,605,300	...	4	...	64,212
Total ...	3,657,836	—	...	140,490

**§ 10. Land Tenure.**

1. **Holdings.**—The Northern Territory was transferred to the Commonwealth on 1st January, 1911. At that date, out of a total area of 335,116,800 acres, there were alienated 473,990 acres; 103,629,497 acres (about one-third) were held under leases and licenses; and the remainder (about two-thirds) was unoccupied. The principal leases were:—

**PRINCIPAL LEASES, NORTHERN TERRITORY, 31st DECEMBER, 1910.**

Land Held Under—	No. of Leases.	Area in Acres.
Pastoral leases ... ..	256	69,278,000
Pastoral permits and approved applications ...	180	31,456,000
Coal permits ... ..	5	1,664,000
Special permits (mining) ... ..	2	726,400
Annual pastoral leases ... ..	10	487,040
Agricultural leases ... ..	30	8,960

The areas given in the section dealing with Land Tenure differ somewhat from those in this table, the explanation being that certain annual leases and approved applications are here included.

2. **Present Land Policy.**—The land policy of the Federal Government is embodied in Ordinance No. 3 of 1912. Only leasehold titles are to be granted, and the conditions are of a very favourable character. Rents will be low, and the general conditions of tenure elastic. All lands will be divided into three classes, as follows:—(i.) pastoral; (ii.) agricultural and farming; (iii.) city. Each of these classifications will be subdivided in turn, according to quality and situation. It is intended that the leases should be in perpetuity, making them almost equivalent to freeholds, with reappraisements of rent values every 14 years in the case of town lands, and every 21 years in the case of agricultural and pastoral lands. Exceptional cases will receive special treatment. Leases may be assigned, transferred or sublet; and licences for grazing on Crown or reserved lands may be granted. A board, consisting of the Director of Lands as chairman, the Director of Agriculture, and the Chief Surveyor, will classify the land and fix the rents.

## SECTION XXXIII.

## INQUIRY INTO THE COST OF LIVING IN AUSTRALIA.

## I. Introduction.

1. *Nature of Inquiry.*—In view of the desirability of obtaining reliable and comprehensive information in regard to the cost of living in Australia, a special inquiry was undertaken by the Commonwealth Bureau of Census and Statistics, covering the period from the 1st July, 1910, to the 30th June, 1911. The requisite data upon which the results of this inquiry are based were obtained by distributing among householders throughout the Commonwealth, copies of a small account book in which provision was made for entering, for each week of the period referred to, particulars of income and expenditure under certain specified headings.

After a careful examination of the methods adopted and procedure followed in similar inquiries in other countries, and so soon as the necessary books and instructions had been drafted and printed, notices were inserted in the daily press throughout the Commonwealth directing attention to the projected inquiry, its scope and purpose; communications were also addressed to the Trades and Labour Councils in the several States, seeking their co-operation and assistance in the distribution of the weekly account books. In consequence of the press notices a large number of requests was received for books to be forwarded, while several of the Trades and Labour Councils expressed their willingness to distribute the books among their members.

2. *Distribution of Budget Books.*—The distribution of the books was effected in June, 1910, the total number despatched from the Bureau being approximately 1500; of that number only 222 were returned after the end of June, 1911, filled in either in part or in whole for the period of 52 weeks under review. It was found necessary to reject 10 books as unsuitable for various reasons, such as incompleteness or obvious inaccuracy, so that the contents of 212 books were available as a basis for the compilation of the information furnished herein. Nearly all these appear to have been kept with considerable care, and the thanks of the Bureau are due to those who have taken so much trouble to assist in the investigation.

It is a matter for regret that so small a proportion (about 14 per cent.) of the books distributed was returned, though it must be admitted that the labour entailed in keeping the desired records for the whole period is somewhat heavy. In future investigations of this kind it is probable that the period dealt with will be considerably curtailed with a view to increasing the number of budgets available for analysis.

It may be observed that the distribution of the books was not in any way restricted, either in regard to the nature of the occupation of the head of the family or to income received. It was hoped that the number and nature of the returns would be such as would enable the results to be presented both for various classes of occupations and for different ranges of income. As will be seen later, however, owing to the small number of budgets available, it was considered desirable to present the results without any classification of occupations, and with only a very limited classification as to amount of income. Inasmuch as the families for which budgets were obtained were distributed over the six States, and the proportion in each State corresponds fairly closely to its population and importance

in an industrial sense, and owing to the fact that the families are not restricted with reference to any particular industry, it is believed that the results of the inquiry are fairly representative of the conditions existing among the majority of the community. While individual budgets may not be absolutely accurate, it can safely be assumed that averages based on any considerable number of statements represent the true facts with substantial accuracy. In any instances where the averages are based upon a small number of families they should of course be accepted with due caution, for though the family statements may be accurate, the averages may not include a sufficiently large number to fairly represent the class to which they refer.

In this connection it should be observed that the value of any inquiry as to cost of living based upon the voluntary keeping of budgets by householders is to some extent limited by the fact that such budgets are more likely to be kept by the frugal and thrifty than the liberal and generous. The consequence is that the results deduced from these budgets—other things being equal—tend to be on the low, rather than the high, side.

## § 2. The Householder's Budget.

1. **Family Conditions.**—The weekly account books issued to householders contained in all 56 pages, 4 in. by 6½ in. in size, bound in flexible board covers. On the inside of the front cover attention was drawn to the facts (a) that the book was the property of and when complete should be returned to, the Commonwealth Bureau of Census and Statistics; (b) that the information furnished would be treated as strictly confidential; and (c) that the name of the person furnishing the budget need not be specified in the book where any objection was felt to so doing. The first page of the book was devoted to the purpose of ascertaining particulars of locality and of family conditions, and was in the following form :—

WEEKLY STATEMENTS  
OF  
INCOME AND EXPENDITURE.  
1910 - 11  
(Examples enclosed herewith.)

State.....

Town or nearest Post Town .....

Number and Ages of Children living at home :

.....

Number and Ages of Children not living at home who are a charge on the family :

.....

\*Occupation of Husband .....

Occupations (if any) of Wife .....

Occupations (if any) of Children.....

.....

\* State occupation very fully, as "Carpenter, Jam Factory;" "Labourer Sawmill;" "Engine-driver, Gas Works," &c.

The object of the first two lines as to locality was to permit of a classification of the results according to geographical distribution; this has only been carried out according to distribution in the several States. The information as to number and ages of children was required for classification purposes as to size and structure of family, while that relating to occupation was intended for the purpose of analysing the variation in the relative income and expenditure of persons engaged in different occupations and employed in different groups of allied industries. Owing to the paucity in the number of budgets returned, it was not, however, found possible to carry into effect the latter intention, while as regards size and structure of family the only classification made was that relating to families having over four members and those having four or less.

2. **Weekly Statements.**—The remaining pages of the book were provided for the householder to fill in week by week particulars of the weekly income and expenditure of his or her family. Each page was in the following form :—

WEEK ENDING .....				191...		
INCOME.				£	s.	d.
From Earnings of Husband	...	...	...	.....	.....	.....
„ Earnings of Wife	...	...	...	.....	.....	.....
„ Earnings of Children	...	...	...	.....	.....	.....
„ Other Receipts	...	...	...	.....	.....	.....
TOTAL	...	...	...	.....	.....	.....
EXPENDITURE.						
Rent* or	...	...	...	.....	.....	.....
Instalments for House	...	...	...	.....	.....	.....
Food—Bread	...	...	...	.....	.....	.....
Meat	...	...	...	.....	.....	.....
Vegetables and Fruit	...	...	...	.....	.....	.....
Milk	...	...	...	.....	.....	.....
Butter, Cheese, &c.	...	...	...	.....	.....	.....
Sugar	...	...	...	.....	.....	.....
Tea, Coffee, &c.	...	...	...	.....	.....	.....
Other Food	...	...	...	.....	.....	.....
Other Groceries—not Food	...	...	...	.....	.....	.....
Non-Alcoholic Beverages	...	...	...	.....	.....	.....
Alcoholic Beverages	...	...	...	.....	.....	.....
Tobacco, Cigars, Cigarettes	...	...	...	.....	.....	.....
Clothing, Drapery, Boots, &c.	...	...	...	.....	.....	.....
Fuel and Light	...	...	...	.....	.....	.....
Fares—Railway, Tram, Bus, &c.	...	...	...	.....	.....	.....
Insurance—Fire, Life, &c.	...	...	...	.....	.....	.....
Contributions to Benefit Societies, &c.	...	...	...	.....	.....	.....
Education—Fees, School Materials, &c.	...	...	...	.....	.....	.....
Medical Attendance and Medicine...	...	...	...	.....	.....	.....
Rates and Taxes	...	...	...	.....	.....	.....
Sport and Amusements	...	...	...	.....	.....	.....
Other Expenditure	...	...	...	.....	.....	.....
TOTAL	...	...	...	.....	.....	.....

\* Or Interest on Mortgage.

Each book despatched was accompanied by a copy of the following documents :

- (i.) *Addressed Envelope.* A post-free addressed envelope was transmitted for the return of the book when completed.
- (ii.) *Specimens.* Specimens of the first page of the book (see p. 4 hereinbefore), and of a weekly return of income and expenditure, each filled in with a supposititious example, were included for the guidance of the householder.
- (iii.) *Instructions.* Printed instructions explaining briefly the object and scope of the inquiry and the manner in which the returns were to be filled in, were sent in the following form :—

## INSTRUCTIONS.

1. The object of the whole inquiry is to obtain important sociological statistics, viz., some indication of the cost and standard of living in the various Australian States.
2. It is desired that the record should extend from 1st July, 1910, to 30th June, 1911, inclusive, so as to obtain fair averages as well as changes in the cost of living in the different months of the year.
3. The book supplied is so drafted as to suit all grades of income, and it is desired to receive records from persons having widely different incomes. The income shewn must be that actually received by the head of the household, and must, therefore, include income earned by any other members of the household.
4. It is necessary that the record should be a correct statement of the true total income and expenditure of each week of the period, and that the grouping under each item in the book supplied should also be correct. For this reason the book should be made up week by week.
5. The expenditure shewn should be inclusive of that for dependents living away from home.
6. Where circumstances prevent the book from being completed for the whole period, it should, nevertheless, be returned to this Bureau.
7. The examples given will shew the method to be followed.
8. It may be pointed out that in a statistical office all matter received is confidential; all officers have to make a declaration of secrecy, and individual returns will under no circumstances be disclosed. Nevertheless, if in view of the character of this inquiry any objection be felt to giving the name, no mention of it need be made on the book.
9. If desired, a report as to the results will be sent on application to any person assisting in the furtherance of this inquiry.

G. H. KNIBBS,

*Commonwealth Statistician.*Commonwealth Bureau of Census and Statistics,  
Melbourne, 1910.

In addition to the directions contained in the above document, instructions as to filling in the returns were published in the daily press, and any person who desired to be advised on any doubtful point had only to write to the Bureau, when he would be furnished with an immediate reply.

**3. Tabulation and Classification.**—In order to facilitate the analysis and classification of the householders' budgets, the contents of each book were transferred to a tabulation sheet, the various details summarised, and a weekly average for each item computed. The next question considered was that of classifying the results in relation to the following matters:—(i.) Geographical distribution, (ii.) size and structure of family, (iii.) income, and (iv.) occupations of wage earners. In regard to the last of these matters, it was found that the number of returns was insufficient to enable any classification to be made.

(i.) *Geographical Distribution.* The following table shews the distribution of families, from which budgets were received, according to States. It was considered that the small number of budgets available for each State, except New South Wales and Victoria, did not justify the presentation of separate results. In the later tables the figures have, therefore, generally been grouped together for the whole Commonwealth. It was hoped, with a sufficient number of returns, to differentiate as to local distribution with greater particularity, as for example in regard to incomes and expenditure of families living in (a) metropolitan towns, (b) country towns, (c) mining districts, and (d) rural districts.

The distribution of the families in the several States is as follows:—

**COST OF LIVING, 1910-11.—DISTRIBUTION OF FAMILIES IN SEVERAL STATES.**

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of families ...	64	81	19	18	18	12	212



(ii.) *Size and Structure of Families.* It was found that the families for which budgets were received were divided roughly into two equal groups in regard to size of family, 107 families having over four members, and 105 four and under. It was therefore decided to adopt these groups as the basis for classification. As regards structure of family, it was originally intended to tabulate special results for normal families of different sizes: i.e., for families having normal members consisting of father, mother, and children within specified age groups; owing to the small number of returns received it was, however, found impracticable to carry out this scheme. The Classification adopted relates to actual size of families, the structure of the family (i.e., whether composed of father, mother, children, dependents, or relatives), being necessarily disregarded.

(iii.) *Income.* The classification as to incomes was adopted after a careful consideration of the facts. In order to make a distinction between the large class of wage-earners who earn under £3 a week, and those persons who earn more than that amount, it was at first intended to adopt a classification according to incomes of over about £150, and those amounting to about £150 and under; it was found, however, that taking £150 as the limit, the former class embraced 168 families, and the latter only 44. Further, on an examination of the books it appeared that a large number of families depends for their support on means other than the actual wages earned by the head of the household, the other main sources of income being earnings of children, boarders, and interest on investments. It was therefore considered desirable to somewhat increase the limit, and it was found that a fairly even distribution was obtained by making the division at £200, there being 113 families whose incomes were over that amount and 99 under. The following statement shews the number of families in each division of the scheme of classification adopted:—

**COST OF LIVING, 1910-11.—NUMBER OF FAMILIES, CLASSIFICATION BY INCOMES AND SIZE OF FAMILIES.**

Particulars.	Number of Families having—			
	Incomes over £200 per annum.		Incomes of £200 and under p. annum.	
	Over 4 Members.	4 Members or under.	Over 4 Members.	4 Members or under.
Number of families	58	41	49	64

### § 3. Family Conditions.

1. **General.**—In order to permit of any adequate analysis or criticism of the figures relating to income and expenditure presented in this report, it appears desirable that the returns as to family conditions should be first investigated. It is proposed to deal with these matters from the following standpoints, viz.:—(a) Geographical distribution of families; (b) Structure and size of families; and (c) Occupations of heads of families.

2. **Geographical Distribution.**—Though the budgets received were not sufficiently numerous to permit of any classification of incomes according to families living in the metropolitan towns and in other parts of the several States, the urban and rural distribution of the families to which the returns refer is of importance.

For the purpose of classification in the following table, the suburbs have been included with the metropolitan towns, and in Western Australia, Fremantle has also been included with Perth. The families in each State are classified according to income and size of family :—

**COST OF LIVING, 1910-11.—CLASSIFICATION OF FAMILIES RESIDING IN METROPOLITAN TOWNS AND IN OTHER PARTS OF EACH STATE.**

Families having Incomes of—	Number of Members.	Number of Families residing in—														Total.		Total Number of Families.
		N.S.W.		Vic.		Qld.		S.A.		W.A.		Tas.						
		Metro- politan.	Other.	Metro- politan.	Other.	Metro- politan.	Other.	Metro- politan.	Other.	Metro- politan.	Other.	Metro- politan.	Other.	Metro- politan.	Other.			
Over £200 ...	Over 4 ...	15	2	16	5	5	1	4	3	3	1	1	2	44	14	58		
	4 and under ...	11	3	13	2	1	1	3	1	2	1	2	1	32	9	41		
£200 and under ...	Over 4 ...	6	6	13	6	4	2	1	3	3	2	1	2	28	21	49		
	4 and under ...	9	12	15	11	3	2	2	1	3	3	2	1	34	30	64		
Total ...		41	23	57	24	13	6	10	8	11	7	6	6	138	74	212		

It may be seen that the majority of the returns received were from families residing in metropolitan towns, 138, or 65.1 per cent., being from such towns and 74, or 34.9 per cent., from other districts.

**3. Structure of Families.**—The following tables have been compiled in order to bring together the more important returns obtained as to membership of families, classified according to income and size of family.

(i.) *General Membership.* The total number of members of the families for which returns were received was 999, including all persons who generally participated permanently in the family expenditure, but excluding temporary guests or visitors. Some of the families were without the husband, who was either dead or separated from his family, and similarly in the case of the wife. The following table shews the component members of the families classified according to income and size of family :—

**COST OF LIVING, 1910-11.—MEMBERSHIP OF FAMILIES COMPRISED IN RETURNS.**

Families having Incomes of—	Number of Members.	Total Families.	Husbands.	Wives.	Children.	Dependents.	Boarders.	Servants.	Total Persons.
Over £200 ...	Over 4 ...	No. 58	No. 57	No. 56	No. 237	No. 5	No. 10	No. 25	No. 390
	4 and under...	41	38	39	47	5	5	8	142
£200 and under	Over 4 ...	49	46	48	173	2	6	2	277
	4 and under...	64	61	62	65	...	...	2	190
Total ...		212	202	205	522	12	21	37	999

From the above table it may be seen that 10 of the families (4.7 per cent.) were without a husband, and that 7 (3.3 per cent.) were without a wife. Over 66 per cent. of the families keeping servants were restricted to the class having incomes of over £200

and comprising over 4 members. Of 202 husbands, 189 were at work during the whole or the greater part of the period under review, while the remaining 13 were of independent means or were invalids.

(ii.) *Average Number of Members in Sex and Age Groups.*—The table in the preceding paragraph shows the gross number of members of the families under consideration, taking no account of the number of persons which were a charge upon the expenditure during the whole period under review. In the next table this is taken into consideration, and the length of time for which any person (stated to have been either temporarily absent from his home or living temporarily at the home) was a charge upon the family expenditure has been computed. Thus, for example, if a boarder or a servant was stated to have resided with the family for only 9 months of the period under review, such a person is taken into account as having been a charge upon the expenditure for three-quarters of the year only, and is therefore assigned the value of 0.75. For the purpose of computing in a later part of this report the average expenditure, weighted according to sex and age, the number of members has been tabulated in the several age and sex groups indicated.

**COST OF LIVING, 1910-11.—AVERAGE NUMBER OF PERSONS WHO WERE A CHARGE ON EXPENDITURE DURING WHOLE PERIOD.**

Families having Incomes of—	Number of Members.	Number of Families.	Males.		Females.		Children.				Total.
			Over 17.	13-16.	Over 17.	13-16.	10-12.	6-9.	2-5.	Under 2.	
Over £200 ...	Over 4 ...	58	98.2	18.4	120.4	21.5	39.0	34.0	36.0	17.9	385.4
	4 and under ...	41	51.4	2.0	58.1	1.0	3.0	7.0	10.0	8.2	140.7
£200 and under	Over 4 ...	49	58.3	6.0	70.5	5.4	20.0	32.0	59.0	24.7	275.9
	4 and under ...	64	64.8	3.5	67.2	4.5	3.0	4.0	23.0	20.1	190.1
Total ...	...	212	272.7	29.9	316.2	32.4	65.0	77.0	128.0	70.9	992.1

(iii.) *Condition as to Children.* Out of the 212 families investigated 180 included children. The subjoined table shows the average number of children in each group, together with the number of children earning wages and those not earning wages (i.e., either at home or at school or college) classified in age groups.

**COST OF LIVING, 1910-11.—CONDITION OF FAMILIES AS TO CHILDREN.**

Families having Incomes of—	Number of Members.	No. of Families having children	No. of Children.	Average Children per Family.	Children at Work.		Children at Home or at School.					
					Over 17.	13-16.	Over 17.	13-16.	10-12.	6-9.	2-5.	Under 2.
Over £200 ...	Over 4 ...	56	237	4.23	47	8	20	32	39	34	36	21
	4 or under ...	30	47	1.56	8	—	8	3	3	7	10	10
£200 and under	Over 4 ...	49	173	3.53	20	2	3	10	20	32	59	27
	4 or under ...	45	65	1.44	2	1	2	7	3	4	23	21
Total...	...	180	522	2.90	77	11	33	52	65	77	128	79

It may be seen from the above table that a somewhat unduly large number of the children in the families investigated were comprised in the lower age-groups, those of the age of 5 years and under numbering 207, or nearly 40 per cent. of the whole number. This somewhat high percentage indicates that a considerable number of the persons rendering returns had not been married for a long period; and, indeed, it is only natural to assume that such persons are the more likely to be interested in an inquiry of this

nature. As might be expected, the great majority of children in the higher age-groups who were not wage-earners is confined to the class having the larger incomes. The total number of children at work was 88, or 16.8 per cent., and of those at home or at school was 434, or 83.2 per cent., on the total number of children.

(iv.) *Dependents, Boarders, and Servants.* The following table shews the number of persons who may be considered as outside the family circle, but whose cost of living is included in the family expenditure, either as dependents (other than wives and children), boarders, or servants. Families having dependents, boarders, or servants during any part or the whole of the period under review are included in this table:—

**COST OF LIVING, 1910-11.—CONDITION OF FAMILIES AS DEPENDENTS, BOARDERS, AND SERVANTS.**

Families having Incomes of—	Number of Members.	Total Families.	Dependents		Boarders.		Servants.		P.c. of Families having		
			Families having Dependents.	Number of Dependents.	Families having Boarders.	Number of Boarders.	Families having Servants.	Number of Servants.	Dependents.	Boarders.	Servants.
Over £200 ...	Over 4 ...	58	4	5	7	10	21	25	6.89	12.07	36.20
	4 and under ...	41	5	5	5	5	8	8	12.19	12.19	19.51
£200 and under	Over 4 ...	49	2	2	3	6	2	2	4.08	6.12	4.08
	4 and under ...	64	...	...	...	...	2	2	...	...	3.13
Total ...	...	212	11	12	15	21	33	37	5.19	7.07	15.09

4. **Occupations of Heads of Families.**—In order to give some idea of the class of persons to whom the returns refer, the following table shewing the occupations of the heads of families has been compiled:—(a) *Unskilled labour* includes such persons as general labourers, railway gangers, etc.; (b) *Skilled labourers*, artisans and tradesmen, such as fitters, carpenters, electrical workers, etc.; (d) *Agricultural* includes farmers, dairymen, gardeners, and orchardists; (e) *Commercial*, those engaged in trade, such as chemists, tobacconists, storekeepers, etc.; (f) *Clerical*, book-keepers and clerks; (g) *Professional*, clergymen, doctors, school teachers, etc.; and (h) *No occupation* comprises persons retired from business, families with no husband, and heads of families who failed to state their occupations:—

**COST OF LIVING, 1910-11.—OCCUPATIONS OF HEADS OF FAMILIES.**

Families having Incomes of—	Number of Members.	Occupation of Head of Family.							Total.
		Unskilled Labour	Skilled Labour	Agric'l. tural.	Com-mercial	Cleric'l	Profes-sional.	None.	
Over £200 ...	Over 4 ...	3	12	3	11	9	16	4	58
	4 and under ...	—	4	2	4	10	11	10	41
£200 and under	Over 4 ...	11	12	1	2	9	9	5	49
	4 and under ...	7	24	5	4	12	6	6	64
Total ...	...	21	52	11	21	40	42	25	212

It may be seen that what is commonly known as the wage-earning class (skilled and unskilled labour) comprises 73 families, or 34.4 per cent.; clerical and commercial together include 61 families, or 28.8 per cent.; and professional 42, or nearly 20 per cent.

## § 4. Incomes.

1. **Sources of Incomes.**—The sources of the family incomes are shewn in the sub-joined table, classified according to amount of income and size of family. The third column shews the number of families having incomes from the husband only. The fourth, fifth, sixth and seventh columns comprise families having incomes from more than one source. "Miscellaneous" comprises incomes from boarders, investments, etc. The figures given in these columns are not mutually exclusive; that is to say that, for example, a family having an income from both husband and wife is included in both the fourth and fifth columns, while a family having an income derived from wife, children and boarders is included in each of the fifth, sixth and seventh columns. It may be seen that a larger proportion of the small families than the large families derive their incomes from the husband only.

**COST OF LIVING, 1910-11.—SOURCES OF INCOMES.**

Families having Weekly Incomes of—	Number of Members.	Families having Incomes from Husband only.	Families having Incomes from more than one source.				Families with sources of Income not stated.	Total Number of Families.
			From Husband and other sources.	From Wife and other sources.	From Children and other sources.	Miscellaneous and other sources.		
		No.	No.	No.	No.	No.	No.	No.
Over £200 ...	Over 4 ...	11	44	9	24	36	2	58
	4 and under ...	16	22	4	3	19	...	41
£200 and under ...	Over 4 ...	16	28	5	8	22	2	49
	4 and under ...	28	31	6	2	29	2	64
Total ...	...	71	125	24	37	106	6	212

2. **Average Incomes.**—The following table shews the average weekly income for each of the groups specified, and also the general average for all families for which budgets were received :—

**COST OF LIVING, 1910-11.—AVERAGE INCOMES OF FAMILIES.**

Particulars.	Incomes of over £200.		Incomes of £200 & under.		General Average.
	Families of over 4 Members.	Families of 4 and under.	Families of over 4 Members.	Families of 4 and under.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Average weekly income ...	6 7 11	6 16 4	3 1 11	2 18 5	4 13 1

The figures given in the above table are subject to certain limitations, inasmuch as in a few cases the total earnings of children were not included in the returns, the amounts specified comprising only the weekly payments made into the housekeeping fund for board and lodging. In a few other cases the amount of actual income was not specified at all, the sums drawn from a bank account for current expenses being given. It is somewhat remarkable that in the higher income class the average incomes of families of over 4 members (£6 7s. 11d.) is less than that of families of 4 and under (£6 16s. 4d.) Although the number of returns is insufficient for secure deductions, this result appears to indicate that the class of persons with larger income have relatively small families.

## § 5. Expenditure.

1. **Relation to Income.**—The average weekly incomes of the 212 families are summarised in the table hereunder. It should be noted that the figures relating to income are subject to the limitations pointed out in the preceding paragraph of this report. The differences between these weekly averages, representing the surplus available for saving, are also shewn.

**COST OF LIVING, 1910-11.—RELATION OF INCOME TO EXPENDITURE.**

Particulars.	Families having Incomes of over £200.		Families having Incomes of £200 and under.		General Average for all Families.
	Over 4 Members.	4 Members and under.	Over 4 Members.	4 Members and under.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Income ...	6 7 11	6 16 4	3 1 11	2 18 5	4 13 1
Expenditure ...	5 12 4½	5 2 5½	2 15 7	2 13 0½	3 19 5
Difference ...	0 15 6¾	1 13 10¾	0 6 4	0 5 4½	0 13 8

Just as the table on page 1175 indicated that, in the higher income group, the smaller families had relatively larger incomes, so the above table points to the fact that, as might be expected, the surplus, after payment of cost of living, is considerably greater in small than in large families. The weekly averages specified in the last line of this table represent annual amounts of £40 9s. 3d., £88 2s. 7d., £16 9s. 4d., £13 18s. 5d., and £35 10s. 8d. respectively. This advantage in economic resources which characterises the small family is probably generally true.

2. **General Analysis of Expenditure.**—Selecting what may be considered as the four most important heads of expenditure, viz., housing, food, clothing, and fuel and light, and grouping all other expenditure under the heading "Other Items," an analysis of the average weekly expenditure per family is given in the following table. The results are shewn both as actual averages and as percentages on the total expenditure. The individual items included in each group may be readily understood by reference to the list given on page 1169.

**COST OF LIVING, 1910-11.—ANALYSIS OF AVERAGE WEEKLY EXPENDITURE PER FAMILY.**

Families having Incomes of—	Number of Members.	Housing.	Food.	Clothing.	Fuel and Light.	Other Items.	Total Expenditure
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Over £200 ...	Over 4 ...	0 13 3½	1 11 10½	0 14 8½	0 3 3½	2 9 1½	5 12 4½
	4 and under ...	0 14 2	1 2 6½	0 12 5½	0 3 8	2 9 7½	5 2 5½
£200 and under	Over 4 ...	0 8 0½	1 2 3½	0 7 4	0 2 4½	0 15 6½	2 15 7
	4 and under ...	0 8 8½	0 16 8	0 6 6	0 2 0	0 19 2½	2 13 0½
General Average ...		0 10 10½	1 3 3½	0 10 1½	0 2 9	1 12 5	3 19 5

**PERCENTAGE ON TOTAL EXPENDITURE.**

		per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Over £200 ...	Over 4 ...	11.54	28.39	13.11	2.95	43.71	100
	4 and under ...	13.83	22.00	12.16	3.58	48.43	100
£200 and under	Over 4 ...	14.48	40.12	13.22	4.26	27.92	100
	4 and under ...	16.41	31.41	12.25	3.77	36.16	100
General Average ...		13.70	29.30	12.72	3.46	40.82	100

It may be seen that, disregarding the expenditure on other items, the cost of food is by far the most important consideration, amounting to over 29 per cent. of the total expenditure. Next comes housing (13.70 per cent.), followed closely by clothing (12.72 per cent.), while expenditure on fuel and light amounts to 3.46 per cent. As regards expenditure on housing, clothing, and fuel and light, the divergencies in the percentages for the several groups, classed according to income and size of family, are not very marked, whereas the percentage expended on food ranges from 22 to over 40, being naturally higher in the larger family groups. The expenditure on food is again relatively much larger in the smaller income group, indicating that economies in expenditure are primarily effected in regard to matters other than food. It is not unlikely, indeed, that expenditure on food alone furnishes a true indication of the standard of material well-being.\* The more limited the resources of the individual, the less must his consumption be, and the coarser the quality of his food.† In Germany anthropometrical measurements have resulted in shewing that the typical man of the poorer classes, by reason of the nutritive inferiority of his food, is neither so corpulent nor so heavy as the typical man of other classes.

In connection with the preceding table it is interesting to compare the results obtained in Australia with those obtained in the United States of America in regard to the economic law propounded by Doctor Engel, for many years Chief of the Royal Bureau of Statistics of Prussia. Dr. Engel's propositions were as follow:—

(i.) That the greater the income the smaller the percentage of outlay for subsistence. This is confirmed in Australia, Germany, and the United States.

(ii.) That the percentage of outlay for clothing is approximately the same, whatever the income.

This proposition is confirmed in Australia, but in Germany and the United States it is not so, as in these countries the percentage of expenditure on clothing increases as the size of the income increases.

(iii.) That the percentage for lodging or rent, and for fuel and lighting, is invariably the same, whatever the income.

The first part of this proposition is not confirmed in Australia, as the families with smaller incomes pay a larger percentage in housing than those with larger incomes. The second part is practically confirmed here.

In the United States the first part is confirmed, and the expenditure for lighting varies little, but the percentage of expenditure for fuel decreases as the income increases. In Germany neither parts of the proposition are confirmed, the percentages decreasing as the incomes increase.

(iv.) That as the income increases in amount the percentage of outlay for sundries becomes greater. This is confirmed in Australia, Germany, and the United States.

**3. Comparison with other Countries.**—Any direct comparison of the results of inquiries as to the cost of living in Australia and other countries is practically impossible, owing mainly to two things, viz., (a) that the inquiries have not generally been conducted on similar lines; and (b), that budgets have not been obtained either for corresponding classes of persons or for similar income groups. Any adequate comparison of cost of living in different countries requires the dissection out of the general result of the following things, viz., (i.) standard of living; (ii.) prices; (iii.) rates of wages; (iv.) social classifications; and (v.) general economic conditions.

Of those countries for which information is available the results for the United States of America and for Germany can be presented in a form similar to that shewn in the table in paragraph 2 hereof (see p. 1176). But even in these cases direct comparisons are impracticable, for in America the inquiry was limited to working-class families,

\* See Journal of the Royal Statistical Society, Vol. LI., p. 161. † It does not of course follow that the nutritive value is less.

while in Germany the average incomes are much lower than in either Australia or the United States. A comparison of the general percentage distribution of expenditure in these countries is shewn in the table hereunder. In order to make the figures more fully comparable, family groups have been selected for the United States and Germany with incomes approximately the same as the general average for Australia.

**COST OF LIVING.—COMPARISON OF GENERAL DISTRIBUTION OF EXPENDITURE  
IN AUSTRALIA, UNITED STATES, AND GERMANY.**

Particulars.	Percentage on Total Expenditure of Cost of—					Total.
	Housing.	Food.	Fuel and Light.	Clothing.	Other Ex- penditure.	
Australia ...	13.70	29.30	3.46	12.72	40.82	100.00
United States* ...	17.40	36.45	5.03	15.72	25.40	100.00
Germany† ...	14.90	30.31	3.12	14.91	36.76	100.00

\* Inquiry made in 1902. † Inquiry made in 1907.

It may be seen that the greatest variation occurs in the percentage expended on food, and this is largely due to the facts previously mentioned, namely, that in the United States families with high incomes were expressly excluded, while in Germany the average income is low, whereas the budgets for Australia include all classes, and incomes are thus relatively high.

As regards expenditure on food in relation to income, comparisons can be made with the United Kingdom, France, and Belgium, in addition to the United States and Germany, special inquiries having been made into the cost of living in these countries by the British Board of Trade during the years 1907 to 1910. In the inquiries instituted in all the countries specified, except Australia, the budgets relate only to working-class families. For Australia figures are therefore given, not only regarding general results obtained for all groups, but also for the special group having incomes of £200 and under, and families of over 4 members, since it is considered that the families included in that group are more closely analogous to the class of families for which investigations were made in the other countries specified. The groups of working-men's families earning the highest rates of wages have been selected for these other countries in order that the results may approximate as closely as possible to the conditions present in the Australian inquiry.

**COST OF LIVING, 1910-11—EXPENDITURE ON FOOD IN AUSTRALIA COMPARED  
WITH THAT IN OTHER COUNTRIES.**

Country.		Average Weekly In- come per Family.	Average Number of Members per Family.	Average Weekly Ex- penditure on Food.	Percentage of Expendi- ture on Food on Average Income.	Weekly Cost of Food per Head.
		£ s. d.	No.	£ s. d.	per cent.	s. d.
Australia	* ...	4 13 1	4.71	1 3 3 $\frac{1}{4}$	25.0	4 11 $\frac{1}{2}$
	† ...	3 1 11	5.6	1 2 3 $\frac{1}{2}$	36.0	4 0 $\frac{1}{4}$
United States	...	3 0 6	6.0	1 12 6	53.7	5 5
United Kingdom	...	2 12 0 $\frac{1}{2}$	6.4	1 9 8	57.0	4 7 $\frac{1}{2}$
Germany	...	2 8 8 $\frac{1}{2}$	5.8	1 7 4 $\frac{1}{2}$	54.4	4 8 $\frac{1}{2}$
France	...	2 12 11	4.9	1 11 7 $\frac{3}{4}$	59.7	6 1 $\frac{1}{4}$
Belgium	...	2 12 1 $\frac{1}{4}$	5.9	1 9 8 $\frac{1}{4}$	56.9	4 9 $\frac{1}{4}$

\* All Groups. † Groups having incomes of £200 and under and families of more than 4 members.



It may be seen, therefore, that in regard to the first set of figures given for Australia (relating to all groups) the weekly cost of food per head is higher than in all the other countries except the United States and France, while the percentage of expenditure on food is less than in any other country. In regard, however, to the special group selected, which is considered to approximate more closely to the groups included in the returns for other countries, the cost per head is considerably less than in any other country, as also is the percentage of expenditure on food.

Having dealt with the general distribution of expenditure, it will now be desirable to refer in greater detail to some of the more important items specified in the budgets.

4. **Housing Accommodation.**—The following table gives particulars of the number of families (a) owning houses unencumbered by mortgage; (b) living rent free, *i.e.*, having houses or quarters either in lieu of, or in addition to, salary or wages; (c) owning houses, but paying interest on mortgages thereon; and (d), leasing houses on rent. The absolute numbers are shewn in addition to the percentages in each class.

**COST OF LIVING, 1910-11.—PARTICULARS OF FAMILIES OWNING, LEASING  
HOUSES, ETC.**

Families having Incomes of—	Number of Members.	Owning Houses.	Living Rent Free.	Paying In- terest on Mortgages	Paying In- stalments on Purchase.	Paying Rent.	Total Families.
NUMBER OF FAMILIES.							
Over £200 ...	Over 4 ...	No. 12	No. 4	No. 6	No. 8	No. 28	No. 58
	4 and under	8	2	6	5	20	41
£200 and under	Over 4 ...	5	4	4	7	29	49
	4 and under	9	3	5	15	32	64
Total	...	34	13	21	35	109	212
PERCENTAGE OF FAMILIES.							
Over £200 ...	Over 4 ...	per cent. 20.69	per cent. 6.89	per cent. 10.35	per cent. 13.79	per cent. 48.28	per cent. 100
	4 and under	19.51	4.88	14.63	12.20	48.78	100
£200 and under	Over 4 ...	10.21	8.16	8.16	14.28	59.19	100
	4 and under	14.07	4.69	7.81	23.43	50.00	100
Total	...	16.04	6.13	9.91	16.51	51.41	100

It may be seen from the above figures that slightly over one-half (51.41 per cent.) of the total number of families lease their houses on rent, and that the proportion of families leasing houses is greater in the lower than in the higher income group. The percentage of families buying houses by instalments is 24.43 in the group having incomes of £200 and under and families of 4 and under, and is considerably higher in that group than in any other. The figures shew, not unexpectedly, that a greater proportion of families in the higher income group than in the lower own their houses.

The average weekly amount spent on housing accommodation by way of interest, instalments on purchase, and rent is shewn in the table hereunder. The last column shews the average weekly percentage of expenditure on housing accommodation on total expenditure for those families which have an expenditure on this item; that is to say, that in computing the percentages, the expenditures of the 47 families which either own their houses or live rent free are excluded.

**COST OF LIVING, 1910-11.—EXPENDITURE PER FAMILY ON HOUSING  
ACCOMMODATION.**

Families having Incomes of—	Number of Members.	Number of Families.	Average Amount Spent Weekly on—			Per cent. of Expenditure on Housing Accommo- dation.
			Interest.	Instal- ments.	Rent.	
			s. d.	s. d.	s. d.	per cent.
Over £200 ...	Over 4 ...	42	4 6 $\frac{3}{4}$	14 6	17 3 $\frac{1}{2}$	16.10
	4 and under ...	31	7 5 $\frac{1}{4}$	13 6 $\frac{3}{4}$	18 4	17.58
£200 and under ...	Over 4 ...	40	2 2 $\frac{1}{2}$	9 10	9 3	17.50
	4 and under ...	52	2 10 $\frac{1}{4}$	10 2 $\frac{1}{2}$	10 3 $\frac{1}{2}$	20.22
General Average	...	165	4 7	11 9 $\frac{1}{2}$	13 3 $\frac{3}{4}$	17.58

It is significant that in both income groups the smaller families pay not only a higher rent than the larger families, but also disburse a greater percentage of their expenditure on housing accommodation. This points to the fact that the smaller families are able to live in greater comfort than the larger.

Owing to the comparatively small number of budgets received, it is not possible to make any general analysis of the average amounts paid for housing accommodation according to geographical distribution of the families. The figures shew, however, that the 25 families living in Sydney paid an average weekly rent of 17s. 10d., or 18.4 per cent. on the total expenditure of their families, while in Melbourne 29 families paid an average weekly rent of 14s. 10 $\frac{1}{2}$ d., or 18.5 per cent. on their total expenditure. The number of budgets from other individual places is not sufficient to warrant the presentation of any averages based thereon.

5. **Expenditure on Food.**—The data obtained from the budgets as to expenditure on food form one of the most important features of the inquiry. It is proposed to present the results from the following standpoints, viz. :—(i.) Average weekly expenditure per family; (ii.) average weekly expenditure per head (unweighted); and (iii.) average weekly expenditure per head (weighted) according to sex and age groups.

(i.) *Average Weekly Expenditure per Family on Food.* The table given hereunder shews the average weekly expenditure per family on each item of food specified in the householder's budget, classified according to income group and size of family.

**COST OF LIVING, 1910-11.—AVERAGE WEEKLY EXPENDITURE PER FAMILY ON  
VARIOUS ITEMS OF FOOD.**

Families having Incomes of—	Number of Members.	Bread.	Meat.	Vegetables and Fruit.	Milk.	Butter, Cheese, etc.	Sugar.	Tea, Coffee, etc.	Other Food.	Total.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£ s. d.
Over £200 ...	Over 4 ...	3 2	7 0 $\frac{3}{4}$	4 4 $\frac{1}{4}$	3 3 $\frac{3}{4}$	4 4	1 10 $\frac{1}{4}$	1 2	6 7 $\frac{1}{4}$	1 11 10 $\frac{1}{2}$
	4 and under ...	1 10 $\frac{1}{2}$	5 1 $\frac{1}{2}$	3 5	2 10 $\frac{1}{4}$	2 7 $\frac{1}{4}$	1 0 $\frac{1}{4}$	0 10	4 9	1 8 6 $\frac{1}{4}$
£200 and under ...	Over 4 ...	2 8 $\frac{1}{2}$	4 11	2 8 $\frac{1}{4}$	2 7 $\frac{1}{4}$	2 5 $\frac{1}{4}$	1 5 $\frac{1}{4}$	0 10 $\frac{3}{4}$	4 4	1 8 3 $\frac{1}{4}$
	4 and under ...	1 8	3 9 $\frac{1}{4}$	2 2	1 9 $\frac{1}{4}$	2 2 $\frac{1}{2}$	1 0	0 8 $\frac{1}{4}$	3 3 $\frac{1}{2}$	0 16 8
General Average	...	2 4 $\frac{1}{4}$	5 2 $\frac{1}{4}$	3 1 $\frac{1}{4}$	2 8	2 11 $\frac{1}{4}$	1 4 $\frac{1}{4}$	0 10 $\frac{3}{4}$	4 8 $\frac{1}{4}$	1 3 3 $\frac{1}{2}$

It may be seen that the most important item of expenditure in Australia is that on meat, which is followed in the order named by expenditure on other food: vegetables and fruit, butter, cheese, etc., milk, bread, sugar, and tea, coffee, etc. That order is

not, however, invariably maintained in the individual groups. As might be anticipated, the expenditure on food is greater in the higher income class and in the larger family groups. A comparison of expenditure on food in Australia with that in other countries has already been given on p. 1178 hereof.

(ii.) *Average Weekly Expenditure per Head on Various Items of Food.*—The next table furnishes particulars of expenditure per head, irrespective of sex and age, on each item of food. In computing the number of persons who were a charge upon the family expenditure temporary absence from home has been taken into account (see p. 1173 hereinbefore).

### COST OF LIVING, 1910-11.—AVERAGE WEEKLY EXPENDITURE ON FOOD PER HEAD.

Families having Incomes of—	Number of Members.	Number of Families.	Number of Heads.	Average Number of Heads per Family.	Expenditure per Head on—								Total.
					Bread.	Meat.	Vegetables and Fruit.	Milk.	Butter Cheese, etc.	Sugar.	Tea, Coffee, etc.	Other Food.	
Over £200 ...	Over 4 ...	58	385.4	6.65	d. 5½	s. d. 1 0½	d. 7½	d. 6½	d. 7½	d. 3½	d. 3	s. d. 1 0	s. d. 4 9½
	4 and under ...	41	140.7	3.43	6½	1 6	11½	10	9½	3½	3	1 0½	4 6½
£200 and under	Over 4 ...	49	275.9	5.63	5½	0 10½	5½	5½	5½	3	3	0 9½	3 11½
	4 and under ...	64	190.1	2.97	6½	1 3½	8½	7½	9	4	3	1 1½	5 7½
General Average ...		212	992.1	4.68	6	1 1	7½	6½	7½	3½	2½	1 0	4 10½

It may be seen that in each of the income groups the smaller families spend a greater amount on food per head than the larger families. This is no doubt partly due to the fact that in the larger families greater economies can be effected in regard to waste, but it also indicates that the smaller families, as previously pointed out, live in a greater degree of comfort than the larger families. The expenditure per head on the various terms specified is in the same order as the expenditure per family.

(iii.) *Average Weekly Expenditure per Head on Food, according to Sex and Age Groups.*—The figures given in the table in the preceding paragraph relating to cost per head of various items of food do not differentiate either between sex or age groups. On page 1173 hereof particulars have already been given specifying the average number of members of families classified according to sex and age groups. By weighting each class, in the manner indicated hereunder, according to the cost of food consumed, an average weekly cost can be computed for each class. Earlier investigations have shewn that the average consumption of an adult male and an adult female differ, so also, of course, does the average consumption at different ages. Hence in analysing the results we should weight each class according to its consumption so determined. Then in the manner indicated hereunder the average weekly cost can be computed for each class on a common basis. (See footnote for method.)<sup>1</sup>

1. Let  $N_1, N_2, N_3, \dots$  etc. represent, in any income and family group, the average number of heads in each sex and age class. Let also  $w_1, w_2, w_3, \dots$  etc., denote the corresponding weights representing the relative consumption of each sex and age class. Then if  $S$  be the total weekly sum expended on food for a whole group, we shall have

$$\frac{S}{N_1w_1 + N_2w_2 + N_3w_3 + \text{etc.}} = k, \text{ say}$$

$k$  being then the average cost of food per unit-weight, this unit being arbitrarily taken to measure  $w$ .

Let  $C_1, C_2, C_3, \dots$  etc., denote the average weekly cost per head in each class with the corresponding suffixes, then

$$C_1 = \frac{Sw_1}{[Nw]} = kw_1$$

the square brackets denoting the sum of all the products of the numbers into the weight as above. Similarly  $C_2, C_3, \text{etc.} = kw_2, kw_3, \text{etc.}$  These values  $kw, \text{etc.}$ , denote then the average weekly expenditure per head for the several classes denoted by the suffixes.

The weights applied to each sex and age group were selected after a careful study had been made of reports and other available information bearing on the matter, both from a physiological, economic and anthropometric standpoint. The weights selected for each class were as follow :—

**COST OF LIVING, 1910-11.—EXPENDITURE ON FOOD, WEIGHTS ASSIGNED TO EACH CLASS.**

Particulars.	Males.		Females.		Children.			
	Over 17.	13-16.	Over 17.	13-16.	10-12.	6-9.	2-5.	Under 2.
Age in years ...								
Weight ...	100	80	80	70	65	50	35	20

The average number of persons in each sex and age class in the various groups classified according to income and size of family have already been given in the table on page 1173. The total weekly expenditure on food for each group was £92 9s. 7d., £46 3s. 10d., £54 11s. 11d., and £53 6s. 7d., while the total weekly expenditure for all groups was £246 11s. 11d. Proceeding on the lines indicated, see formula in preceding footnote, the results are shewn for each class in each group in the following table :—

**COST OF LIVING, 1910-11.—AVERAGE WEEKLY EXPENDITURE PER HEAD ON FOOD FOR EACH SEX AT DIFFERENT AGES.<sup>1</sup>**

Families having Incomes of—	Number of Members.	Males.		Females.		Children.			
		Over 17.	13-16.	Over 17.	13-16.	10-12.	6-9.	2-5.	Under 2.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Over £200 ...	Over 4 ...	6 6½	5 2½	5 2½	4 6½	4 2½	3 3½	2 3½	1 3½
	4 and under ...	8 3½	6 7½	6 7½	5 10	5 4½	4 1½	2 10½	1 8
£200 and under	Over 4 ...	6 2½	4 11½	4 11½	4 4	4 0½	3 1½	2 2	1 2½
	4 and under ...	7 6½	6 0½	6 0½	5 3½	4 11	3 9½	2 7½	1 6
General Average ...		6 11	5 6½	5 6½	4 10	4 6	3 5½	2 5	1 4½

<sup>1</sup> These are the values of *kw* in the formula deduced as shewn.

It may be seen that instead of the general average cost previously obtained for all classes, amounting to 4s. 10½d., the average cost in the special sex and age classes ranges from 1s. 4½d., in the case of a child under two years of age, to 6s. 11d. for an adult man. From the figures given in the above table the average cost of food can, of course, be computed for any given family. Applying the results shewn in the table to various families selected at random from the householders' returns, it is found that the divergencies between the cost of food thus estimated and the average cost obtained from the weekly budgets are generally small. This indicates that the weights which have been assigned are substantially in accordance with the facts. Thus, for a family in New South Wales, consisting of father, mother, and five children, aged 11, 8, 5, 4 and 1 year, and having an income of over £200 a year, the estimated weekly cost of food, according to the results given in the preceding table, is 25s. 1d., whereas the actual average computed from the weekly budgets is 23s. 10d. Again, in the case of a family of eleven persons, also with an income of over £200, the estimated cost is 41s. 1½d., as against an actual cost of 42s. 5½d.; and for a family of seven persons in Western Australia, with an income under £200 a year, the estimated cost is 27s., as against an actual average of 30s. 10d.

It is not practicable to obtain similar results for sex and age classes in regard to expenditure on items other than food, owing to the difficulty in computing any satis-

factory system of weights accurately denoting the extent to which the various items are used or consumed by persons in the various classes.

**6. Expenditure on Clothing.**—In the family budgets there was included a number of persons, such as boarders, servants, and adult children, whose clothing was not paid for out of the common fund. In order, therefore, to obtain particulars of the average cost per head these persons must be excluded. The third column in the table hereunder shews the average number of persons whose expenditure on clothing was included in the returns, due allowance having been made for temporary absence from home. The succeeding columns shew the average weekly and the corresponding annual expenditure for the different income and family groups.

**COST OF LIVING, 1910-11.—AVERAGE WEEKLY AND ANNUAL EXPENDITURE PER HEAD ON CLOTHING.**

Families having Incomes of—	Numbers of Members.	Number of Heads.	Expenditure on Clothing.			
			Per Week.		Per Year.	
			s.	d.	£	s. d.
Over £200 ... ..	Over 4 ... ..	328.3	2	4	6	0 11
	4 and under ...	118.9	4	3½	10	4 10
£200 and under ...	Over 4 ... ..	253.7	1	5	3	13 8
	4 and under ...	184.1	2	3	5	17 5
General Average ... ..		885.0	2	5	6	6 2

**7. Expenditure on Other Items.**—The table hereunder shews the average weekly expenditure per family on items other than housing, food, clothing, and fuel and light, each of which, with the exception of the last, has been dealt with separately. Expenditure on fuel and light does not permit of further analysis. The percentage of each item on the total expenditure is also shewn.

**COST OF LIVING, 1910-11.—AVERAGE WEEKLY EXPENDITURE PER FAMILY ON OTHER ITEMS.**

Families having Incomes of—	Number of Members.	Other Groceries not Food.	Non-alcoholic Beverages.	Alcoholic Beverages.	Tobacco, Cigars, etc.	Fares.	Insurance.	Contributions to Benefit Societies.	Education and School Materials.	Medical Expenses.	Rates and Taxes.	Sports and Amusements.	Other Expenditure.	Total.
AVERAGE WEEKLY EXPENDITURE.														
Over £200 ... ..	Over 4 ... ..	s. d. 2 9½	d. 3	s. d. 0 9	d. 5½	d. 4	s. d. 7 6	s. d. 9½	s. d. 1 2	s. d. 2 9	s. d. 3 9½	s. d. 2 1½	s. d. 1 4½	£ s. d. 22 4 2
	4 and under ...	2 2½	3½	1 0½	6½	3	2½	4 10	1 3½	1 7	3	1 2	8½	26 4½
£200 and under ...	Over 4 ... ..	1 10½	1½	0 3½	5½	1	4 1	8½	0 0	4 1	7½	0 6½	0 5½	5 6½
	4 and under ...	1 8½	1½	0 4½	6½	1	9½	1 10½	1 0½	4 1	5½	1 1	0 6½	8 3½
General Average ...		2 1½	2½	0 7	6	2	8½	3 9	1 1½	3 2	5½	1 6½	1 1½	15 0½
PERCENTAGE ON TOTAL EXPENDITURE.														
Over £200 ... ..	Over 4 ... ..	% 2.46	% 0.22	% 0.67	% 0.41	% 4.08	% 6.02	% 1.04	% 2.45	% 3.35	% 1.89	% 1.24	% 19.88	% 43.71
	4 and under ...	2.15	0.27	1.04	0.51	3.13	4.72	1.24	1.55	3.01	2.66	2.40	25.75	48.43
£200 and under ...	Over 4 ... ..	3.33	0.22	0.49	0.86	2.40	3.04	1.91	0.60	2.96	1.01	0.79	10.31	27.92
	4 and under ...	3.21	0.27	0.70	1.02	3.33	3.57	2.00	0.62	2.70	2.04	1.02	15.68	36.16
General Average ...		2.67	0.26	0.74	0.63	3.41	4.72	1.41	1.57	3.09	1.97	1.41	18.04	40.82

It may be seen that, disregarding "other expenditure," the most important item in the above table is expenditure on insurance, which is followed in the order named by fares, medical expenses, other groceries not food, rates and taxes, education and school materials, contributions to benefit societies and sports and amusements (equal), alcoholic beverages, tobacco, cigars, etc., and non-alcoholic beverages.

In view of the probability, previously referred to, that the budgets include a considerable proportion of returns from householders whose habits are of a thrifty and economical nature, and who habitually exercise a careful supervision over their expenditure, it appears likely that the average amounts specified as being expended on various items—especially on those which are of the nature of luxuries—are somewhat too low to be representative of the general community. This view is also borne out by an examination of the individual budgets. Thus, in regard to alcoholic beverages, it appears that no less than 88 out of the 212 families were teetotallers. Of the balance 42 families spent on this item an average amount of less than 3d. per family per week, while there are only 15 families entered as spending over 2s. each a week. Of the last number nine exceeded 3s. each per week, and three exceeded 5s. a week. On non-alcoholic beverages the average weekly expenditure per family is only 2½d., while the average expenditure on sports and amusements is also very low, viz., 1s. 1½d. per week, 21 families returning no expenditure under this heading. Expenditure on tobacco is also small, the weekly average per family being 6d. There are only 81 families with a weekly expenditure in excess of that sum, while 103 families returned no expenditure on this item. The relatively high expenditure on insurance and contributions to benefit societies, amounting together to 6.13 per cent. on the total expenditure, indicates thrift and economy. "Other expenditure" includes a considerable variety of miscellaneous items, such as servants' wages, furniture, repairs and maintenance of property, holiday expenses, and any other outlay not specifically mentioned under any other heading. The percentage on total expenditure ranges from 10.31 for larger families in the smaller income group to 25.15 for small families with larger incomes.

8. **Conclusion.**—It is to be regretted that in an inquiry of such importance, and so closely touching the interests of the majority of the community, the response of the public in furnishing budgets of income and expenditure has been so limited. In a similar inquiry carried out in the United States of America in 1902, data were obtained as to cost of living for one year from 25,440 families, representing 124,108 persons. Many interesting investigations and important analyses could thus be carried out. Again in Germany, in 1907, schedules were distributed to 4134 families, of which 960, or 23.2 per cent., filled in the particulars for the full period of twelve months, while 699 families, or 16.9 per cent., persevered for from six to eleven months. The results of the inquiry in Australia compare very unfavourably with those in the countries mentioned, only 178, or 9.4 per cent., on the total number distributed (1500), having persevered for the full period of twelve months, and 20 families, or 1.1 per cent., for from six to eleven months. The result in those countries where the people respond willingly to inquiries of this nature is that a better knowledge of sociological and economic conditions is acquired, and the possibility of directing national development on scientific lines is enhanced. In the United States and Germany especially, it appears that the masses of the community are beginning to realise that, in so far as sociological knowledge can contribute to national success, that people has the position of advantage whose investigators discover the largest body of scientific truth, and whose practical men are the most prompt in the application of it in social organisation. A movement has recently been set on foot for an inquiry into the cost of living on an international basis. If such an inquiry be carried out in all its bearings the results should go far towards elucidating several important matters in regard to which the information at present available is meagre and unsatisfactory.

## SECTION XXXIV.

## MISCELLANEOUS.

## § 1. Immigration.

## (A) The Encouragement of Immigration into Australia.

1. **Introduction.**—Various measures have from time to time been adopted by the Commonwealth and State Governments, as well as by private societies and individuals, with a view to promoting the immigration of suitable classes of settlers into Australia. Some of the States of the Commonwealth are at present pursuing immigration policies of a vigorous nature; in others, relatively little is being done. The activities of the Commonwealth Government (which is vested with constitutional powers in regard to immigration under Sec. 51, xxvii., of the Constitution Act 1900) with respect to the encouragement of immigration, have hitherto practically been confined to advertising in handbooks, newspapers, and periodicals, the resources and attractions of Australia.

2. **State Immigration.**—The advertising in the United Kingdom of the resources of the individual States has been carried out by their Agents-General in London. Various means have been adopted, including newspaper advertising; the publication of illustrated pamphlets bearing on the resources and principal primary industries of the State; lectures by officers who have a knowledge of the conditions prevailing in the State; official displays at the principal agricultural, manufacturing, and similar exhibitions; cinematographic pictures typical of industrial life and scenic views; and pictures and lantern slides.

(i.) *Nominated and Assisted Passages.* Arrangements have been made by most of the State Governments with several of the principal shipping companies for substantial reductions in the amounts of passage money to be paid by immigrants. These reductions are generally granted to all persons desiring to settle on the land or engaging in any form of rural industry, to domestic servants, and to any others who satisfy one of the several Agents-General in London that they will make suitable settlers. Provision has also been made whereby settlers may nominate their relatives or friends for passage to Australia at greatly reduced rates.

(ii.) *Reception on Arrival.* Immigrants whose coming is advised are met on board the vessel on arrival by Government officers, who make themselves acquainted with the needs of the passengers and assist and advise them in various ways. To those desirous of settling on the land, information and assistance is rendered by officers of the Lands Department, and special concessions are granted in respect of fares on the Government railways. In other cases endeavours are made to obtain employment for each applicant according to his special needs and qualifications.

(iii.) *Numbers of Immigrants.* Particulars of the net immigration to the Commonwealth are given on pages 132-3, and of assisted immigration on page 140, hereinbefore.

(iv.) *Recent Immigration.* The years 1910 and 1911 marked a great step forward in Australian immigration generally, as several, if not all, of the State Governments

adopted more active and direct means than had hitherto existed for making the advantages and opportunities of their respective States better known to the people of the United Kingdom, Europe, and America. In Victoria, to which State a small number of emigrants from America had been attracted (chiefly by the irrigable areas), it was decided to further enlighten American and Canadian home-seekers with regard to irrigated lands, and a delegation was accordingly sent to Vancouver by the Victorian Government to arrange for a special excursion of land-seekers, who arrived in Australia early in May, 1912. Many of these have since taken up land in the irrigable areas and other portions of the State. It appears likely that the success of the Victorian experiment will result in definite steps being initiated by the other States of the Commonwealth to attract population from similar sources.

(v.) *Uniform Rates for State-aided Immigrants.* The matter of State-aided immigration to Australia was discussed at the Premiers' Conference, held in Melbourne early in 1912, and this resulted, amongst other things, in the fixing of a scale of minimum rates of passage money which immigrants to any of the States would be charged in future, such rates to operate as from 31st March, 1912. It was expressly agreed, however, that, while no State should charge a lower amount than those mentioned, no objection would be made to higher rates being imposed. The minimum scale of passage rates arranged at the Conference is as follows:—(a) Farmers, farm hands, skilled artisans, and all nominated, assisted, or indented male immigrants, £6. (b) Adult females, £3. (c) Children of immigrants under 12 years of age, £1 10s. Age limits for all State-aided immigrants were also fixed as follows:—(a) Males, married women and widows, 45 years. (b) Single women, 35 years. The only free immigrants to be those whom the shipping companies carry free. It was also arranged that the maximum bonus payable to immigration agents be as follows:—(a) Per adult, £1; per child under 12 years, 10s. (b) In the case of an assisted immigrant recruited by an agent nominating his wife and family within twelve months of his arrival in the State, a similar bonus on account of the wife and family be paid to the agent. (c) In the cases of immigrants with capital of £200 and over, which capital is deposited with the Agent-General for transmission to the State, an additional bonus of 1 per cent. to the agent on the capital so deposited.

**3. Initiation of Commonwealth Scheme.**—For the financial year 1911-12 a sum of £20,000 was voted to the Commonwealth Department of External Affairs for advertising the attractions of Australia for settlers, farm workers, and tourists. The State Immigration Bureaux co-operate with the Department of External Affairs in keeping the High-Commissioner for Australia in London advised as to lands in the respective States available for selection, the openings for agricultural workers, and as to general information concerning matters of interest to intending settlers. A press advertising campaign has been initiated, the Commonwealth carrying on the general advertising of Australia by means of paragraphs and illustrated articles in British, European, and American publications, while the several States advertise for the class of immigrants they specially require. It is proposed that "landseekers' excursions" shall form an important part of the Department's operations. Bioscope films are utilised for the illustration of lectures, and handbooks for settlers and tourists, as well as folders, and other publications have been issued. Pictorial posters are also utilised.

**4. Visit of Scottish Agricultural Commissioners.**—In 1909 communications were entered into with Lord Pentland, Secretary of State for Scotland, relative to arranging for a visit to Australia of a number of prominent Scottish gentlemen interested in agriculture as land owners, farmers, Directors of Scottish Chambers of Agriculture, and also a number of men engaged in scientific agricultural education. Twelve Commissioners were nominated by Lord Pentland, and arrangements were made for them to tour the Commonwealth. The members of the Commission reached Fremantle on the 20th September, 1910, and, under the direction of a representative of the Department of External Affairs, proceeded to Queensland, and began an itinerary which took them



throughout the principal agricultural districts and many of the pastoral districts of each of the States. The tour, extending over a distance of about 14,000 miles, concluded on the 19th January, 1911, when the Commission sailed from Fremantle. The Commissioners are submitting to the Commonwealth Government a report as to their observations, and the report will be circulated in the United Kingdom and elsewhere for the information and guidance of intending settlers and others.

**5. The High Commissioner for Australia and the Agents-General.**—Intending settlers or immigrants may, on application, obtain information from the High Commissioner for Australia—

THE RIGHT HON. SIR G. H. REID, P.C., G.C.M.G., ETC.,  
COMMONWEALTH OFFICES,  
72 VICTORIA STREET,  
LONDON, S.W.

Information regarding individual States may be obtained from the officials specified below :—

#### AUSTRALIAN AGENTS-GENERAL.

<i>New South Wales</i>	T. A. COGHLAN, Esq., I.S.O.	123-125 Cannon St., London, E.C.
<i>Victoria</i> ...	Hon. Sir JOHN W. TAVERNER, K.B. ...	Melbourne Place, Strand, London
<i>Queensland</i> ...	Major Sir T. B. ROBINSON, K.B. ...	Marble Hall, 409-10, Strand, London
<i>South Australia</i>	HON. A. A. KIRKPATRICK ...	85 Gracechurch St., London, E.C.
<i>Western Australia</i>	Sir NEWTON J. MOORE, K.C.M.G. ...	15 Victoria St., Westminster, London
<i>Tasmania</i> ...	Hon. SIR JOHN MCCALL, K.B., M.D. ...	5 Victoria St., Westminster, London

#### (B) The Regulation of Immigration into Australia.

**1. Pre-Federal Restrictions.**—(i.) *Alien Races.* The several States of Australia had regarded it as desirable, long prior to Federation, to impose certain restrictions upon the admission of persons wishing to become inhabitants of those States. The influx of Chinese, for example, was limited by stringent statutes, and later general Acts were passed in some of the States which had the effect of restricting the immigration of other—principally Asiatic—races.

(ii.) *Undesirable Immigrants.* Further restrictions were placed upon the admission of persons who were undesirable as inhabitants, either for medical or moral reasons, or who were likely to be an economic burden upon the community.

**2. Powers and Legislation of the Commonwealth.**—(i.) *Constitutional Powers.* By Chap. I., Pt. V., Sec. 51, xxvii. and xxviii. of the Commonwealth Constitution Act the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals. (See page 23 herein.)

(ii.) *Legislation.* The powers above specified have now been exercised by the Commonwealth Government, and the laws passed in pursuance thereof supersede the State laws above referred to.

The first Act passed, dealing with this matter, was the Immigration Restriction Act 1901, which contained provisions restricting the immigration of the classes of

persons mentioned above. This Act, which contained clauses restricting the immigration of persons under contract, was subsequently repealed by the Contract Immigrants Act 1905, which amended and was substituted for the original Act, but both these Acts have since been amended by the Immigration Restriction Acts of 1908 and 1910, and the immigration of alien races and undesirable persons is now regulated by these latter Acts. Admission of immigrants under contract to perform manual labour is, however, still controlled by the provisions of the Contract Immigrants Act 1905, and will be permitted if the contract is in writing, is made by or on behalf of some person named, who must be resident in Australia, and approved by the Minister. Such approval will not be given if the contract is made with the view of affecting an industrial dispute or if the remuneration and other terms are not as advantageous to the contract immigrant as those current for workers of the same class at the place where the contract is to be carried out. See page 1069 herein.)

There is an additional provision where the proposed immigrant is not a British subject born in the United Kingdom or descendant of such a person. In such case it has to be proved that there is a difficulty in the employers obtaining in the Commonwealth a worker of at least equal skill and ability.

In case of infraction of the law it is provided that the contract is absolutely void and the immigrant and employer are both liable to penalties, and the employer is also liable to pay the immigrant until he obtains employment, or, at the option of the immigrant, to provide expenses for his return to the country whence he came.

**3. Prohibited Immigrants.**—(i.) *Provisions of the Acts.* Persons comprised in the following classes are prohibited from entering the Commonwealth, viz.:—(a) Any person who fails to pass the dictation test; that is to say, who fails to write out not less than fifty words of a language prescribed by regulation when dictated to him by an officer administering the Act. (b) Any person likely to become a charge upon the public. (c) Any idiot or insane person. (d) Any person suffering from an infectious or contagious disease. (e) Any person who has been convicted of an offence, other than a mere political offence, and has been sentenced to imprisonment for one year or longer and has not served his sentence or received a pardon. (f) Any person undesirable for moral reasons.

Regarding (a) it may be stated that the Act of 1901 provided for the dictation of not less than fifty words of a European language. The Act of 1905 provided for the retention of this test until regulations be passed prescribing the languages to be employed. No such regulations have yet been made, and the provision of the Act of 1901 is therefore *de facto* still in force. It may be stated that the dictation test is not and never has been imposed upon persons of European race.

(ii.) *Exemptions.* To these restrictions there are the following exemptions, viz.:—(a) Any person holding an exemption certificate. (b) Members of the King's regular land and sea forces. (c) The master and crew of any public vessel of any Government. (d) The master and crew of any other vessel landing during the stay of the vessel in a Commonwealth port; but before the ship can obtain her outward clearance the crew must, at the demand of an officer administering the Act, be mustered, and if any member of the crew be missing, and would otherwise, in the opinion of the officer, have been a prohibited immigrant, then such person is deemed to be a prohibited immigrant, and until the contrary be proved, to have entered the Commonwealth contrary to the Act. (e) Any Commissioner of, or other person accredited from, the Imperial or any other Government.

(iii.) *General Provisions.* An immigrant may be required to pass the dictation test at any time within two years after he has entered the Commonwealth.

A prohibited immigrant within the meaning of (a) above may, at the discretion of an officer, be allowed to enter the Commonwealth, or to remain within it, upon depositing £100 and within thirty days either obtaining an exemption certificate or departing from the Commonwealth; in either case the deposit is returned.

The punishment for breach of the Act by a prohibited immigrant is imprisonment for six months and deportation in addition to or in substitution for such imprisonment, if so ordered.

**4. Liability of Shipmasters and Others.**—The master, owners, agents, and charterers of a vessel from which a prohibited immigrant enters the Commonwealth are jointly and severally liable to a penalty not exceeding £100 for each entrant. The vessel may be detained as security, but may be released upon the giving of a bond with two sureties for the payment of any penalties; the vessel may be seized and sold in default of payment of penalties. The master, owners, agents, and charterers may be required to provide a return passage for the prohibited immigrant, and to pay for his maintenance during his detention prior to deportation. Masters of vessels are authorised to prevent such a person from landing and to obtain any necessary assistance.

Under the Immigration Restriction Act 1908, any person on board a vessel at the time of her arrival from any place outside Australia at any port in Australia who is not (a) a *bona fide* passenger of the vessel, or (b) a member of the crew of the vessel whose name is on the articles, is deemed to be a stowaway, unless the master gives notice that the person is on board the vessel, and does not permit him to land until an officer has had an opportunity of satisfying himself that the person is not a prohibited immigrant. The master, owners, agents, and charterers of a vessel are jointly and severally liable to a penalty of £100 for each stowaway brought into any port in Australia. Power is given to search vessels for stowaways. The Immigration Restriction Act, 1910, provides penalties for being concerned in bringing immigrants secretly to the Commonwealth.

**5. Agreements with other Countries.**—Arrangements may be made with the Government of any country regulating the admission into Australia of the subjects or citizens of such country, such subjects being not, during the subsistence of the arrangement, required to pass the dictation test.

Persons who have resided either continuously or from time to time in the Commonwealth for a period of five years in the whole, and who are about to depart from it, being persons who, if they return, would be prohibited immigrants, may obtain a certificate of exemption entitling them to return.

Certificates of exemption are granted by the Minister of External Affairs, whose department administers the Act, and also by the collector of customs in each State.

**6. Statistics.**—The following tables shew the number of persons who desired but were not permitted to land, those who were allowed to land, and the nationality of the persons admitted.

**PERSONS ADMITTED OR REFUSED ADMISSION TO COMMONWEALTH UNDER  
PROVISIONS OF IMMIGRATION RESTRICTION ACT, 1904 to 1911.**

Year.	Persons Admitted who Passed Education test.	Persons Admitted without Passing Education Test.	Persons Refused Admission.
1904	1	48,337	117
1905	3	47,940	106
1906	Nil	57,646	53
1907	Nil	71,988	62
1908	1	75,660	108
1909	1	83,324	108
1910	...	94,495	41
1911	Nil	139,020	83

## NATIONALITY OF PERSONS ADMITTED, 1904 to 1911.

Nationality.	1904.	1905.		*1906.	*1907.	†1908.	†1909.	1910.*	1911.*
	Without Test.	Without Test.	With Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.
<b>EUROPEANS—</b>									
Austrians ...	930	683	...	691	651	736	895	818	1,184
Belgians ...	20	25	...	33	64	45	35	50	84
British ...	39,026	39,975	...	47,396	60,172	64,374	71,201	81,455	124,061
Danes ...	103	125	...	259	280	227	272	269	393
Dutch ...	26	43	...	91	94	120	187	175	307
French ...	2,076	1,402	...	1,866	1,685	1,546	1,347	1,160	1,166
Germans ...	823	926	...	1,339	1,909	1,911	2,109	2,449	2,517
Greeks ...	194	121	...	240	202	296	327	380	583
Italians ...	814	734	...	839	992	902	1,078	883	1,365
Maltese ...	...	...	...	...	...	...	...	...	41
Poles ...	8	13	...	5	6	22	24	11	34
Portuguese ...	...	2	...	3	6	5	10	3	6
Rumanians ...	...	...	...	...	...	12	11	3	13
Russians ...	122	157	...	293	388	349	466	735	994
Scandinavians ...	320	281	...	776	1,173	825	891	1,210	1,384
Spaniards ...	27	35	...	32	86	57	56	49	128
Swiss ...	79	63	...	68	78	78	131	104	130
Turks ...	...	3	...	8	6	4	14	10	10
Other Europeans†	7	17	...	18	29	112	16	22	27
<b>AMERICANS—</b>									
N. Americans ...	563	603	...	867	889	687	692	746	914
S. Americans ...	...	...	...	12	15	10	14	13	17
American Indians ...	...	...	...	...	...	...	...	...	31
Negroes ...	13	15	1	4	9	4	6	14	13
French Creoles ...	...	...	...	...	...	...	...	...	...
West Indians ...	6	3	1	...	13	23	6	13	11
<b>ASIATICS—</b>									
Afghans ...	...	7	...	3	9	15	3	2	14
Arabs ...	...	3	...	...	8	3	1	1	1
Burmese ...	...	...	...	...	...	...	1	...	...
Chaldeans ...	...	...	...	...	...	...	...	...	...
Chinese ...	847	1,269	...	1,134	1,424	1,771	1,729	1,819	2,009
Cingalese ...	9	15	...	6	12	10	10	14	4
East Indians ...	...	...	1	...	...	...	...	...	...
Eurasians ...	...	...	...	...	...	...	6	14	7
Filipinos ...	54	74	...	120	57	27	37	66	17
Hindoos ...	461	146	...	75	129	74	130	156	188
Japanese ...	461	251	...	356	521	555	509	565	459
Javanese ...	75	62	...	52	1	...	52	4	12
Kurds ...	...	...	...	...	...	...	...	...	...
Malays ...	469	289	...	436	370	230	309	302	479
Syrians ...	39	51	...	66	58	45	73	96	104
<b>OTHER RACES—</b>									
Maoris ...	...	1	...	2	8	48	108	62	31
Mauritians ...	...	...	...	...	...	3	3	4	9
Pacific Islanders ...	193	98	...	156	121	89	94	54	69
Papuans ...	552	415	...	368	493	430	439	622	139
St. Helena Blacks ...	...	...	...	...	...	1	1	...	...
Unspecified ...	20	33	...	32	30	14	31	141	65§
<b>Total</b> ...	<b>48,337</b>	<b>47,940</b>	<b>3</b>	<b>57,646</b>	<b>71,988</b>	<b>75,660</b>	<b>83,324</b>	<b>94,495</b>	<b>139,020</b>

\* No persons were admitted after passing the test in either of the years 1906, 1907, 1910 or 1911.  
† Not specified. ‡ One person was admitted, after passing the test, in each of the years 1904, 1908, and 1909. § Including 36 Timorese.

## § 2. Patents, Copyrights, Trade Marks, and Designs.

1. **Devolution of Jurisdiction upon the Commonwealth.**—Prior to the establishment of Federation, and for a few years thereafter, each Australian State possessed independent jurisdiction in respect of patents, copyrights, trade marks, and designs, and had, with the exception of Tasmania in regard to copyrights, enacted its own laws. Any person, therefore, who desired to obtain the grant of a patent, or the registration of any copyright, trade mark, or design had necessarily, with the exception aforesaid, to incur the trouble and expense of making separate applications. The Commonwealth Constitution Act conferred upon the Federal Parliament power to legislate respecting these

matters. (See page 23 hereinbefore.) The Patents Act of 1909 applied the laws relating to patents for inventions, to the territory of Papua.

The State Acts, though in general based upon the Imperial Statutes dealing with these subjects, were not wholly governed by them. The Commonwealth Acts, both in regard to principle and practice, have the same general foundation, but in some respects have been modified and brought into line with the totality of Australian experience.

**2. Patents.**—The first Commonwealth Patents Act was passed in 1903, and was amended in 1906, 1909, and 1910. (See page 41 hereinbefore.) Under these Acts, which are administered by a "Commissioner of Patents," the power of the States to grant patents was abolished, and their functions in that respect were transferred to the Commonwealth. A single Commonwealth patent now gives throughout the Commonwealth and the territory of Papua that protection which formerly could only be obtained by procuring a patent in each State and the said territory. The rights of State patentees or the patentees in the territory of Papua are in all cases reserved to them. The holder of a State patent in force may obtain, for a period not exceeding the unexpired time thereof, a Commonwealth patent for the invention comprised in the State patent, provided however, that any State other than the State in which the patent under the States Patent Act was granted may be excepted from the patent if the Commissioner of Patents is satisfied that the invention either (a) is not novel, (b) has been made the subject of a pending application, or (c) has been published, in such State. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent, or within such extended time, not exceeding one year, and upon payment of further fees as may be allowed.

(i.) *Applications for Patents.* Any of the following persons may make application for a patent:—(a) The actual inventor. (b) His assignee, agent, attorney, or nominee. (c) The actual inventor or his nominee jointly with the assignee of a part interest in the invention. (d) The legal representative of a deceased actual inventor or of his assignee. (e) Any person resident in the Commonwealth to whom the invention has been communicated by the actual inventor, his legal representative, or assignee (if the actual inventor, his legal representative, or assignee is not resident in the Commonwealth). An application for a patent must be for one invention only, and must be made in the form prescribed, and lodged by being left at or sent by post to the Patent Office at Melbourne. It must be accompanied by either a provisional or a complete specification. The application must contain a declaration in the prescribed form setting out the facts relied on to support the application, and must be signed by the applicant before a witness.

(ii.) *Term for which Granted.* The term for the duration of every patent is limited to fourteen years from the date of application. A patent ceases if the patentee fails to pay the renewal fee within the prescribed time.

(iii.) *Opposition to Grant of Patent.* Within three months of the advertisement of the acceptance of a complete specification, or within such further time, not exceeding one month, as may be allowed by the Commissioner, any person may give notice at the Patent Office of opposition to the grant on any of the following grounds:—(a) That the applicant has obtained the invention from the opponent or from a person of whom he is the legal representative or assignee or nominee. (b) That the invention has not been communicated to the applicant by the actual inventor his legal representative or assignee (if the actual inventor his legal representative or assignee is not resident in the Commonwealth). (c) That the invention has been patented in the Commonwealth on an application of prior date or has been patented in a State. (d) That the complete specification describes or claims an invention other than that described in the provisional specification, and that the opponent has applied for a patent for such other invention in the interval between the leaving of the provisional and complete specifications. (e) Want of novelty. (f) Prior publication.

The case is heard and decided by the Commissioner, from whose decision an appeal lies to the High Court or the Supreme Court of the State in which the Patent Office is situated.

(iv.) *Single Patent for Cognate Inventions.* The Act of 1909 provides that two or more provisional specifications for inventions which are cognate or modifications one of the other and constituting a single invention may be combined in one complete specification, upon which a single patent may be granted in respect of the whole of such applications.

(v.) *Patents of Addition.* Special provisions are made for granting patents to an applicant or patentee in respect of any improvement on his invention. Such patents are called "Patents of Addition." They are granted for a term of the same duration as that of the original patent, or to such of that term as is unexpired, and in respect of such patents no renewal fee is payable.

(vi.) *Amendments.* Amendments to specifications by way of disclaimer, correction, or explanation may be allowed on request to the Commissioner, provided that the specification, if amended as requested, does not claim an invention substantially larger than, or different from, the original invention. Any person may oppose an amendment on giving notice of opposition at the Patent Office. Amendment of other documents is provided for by the regulations.

(vii.) *Revocations of Patents.* Revocation of a patent may be obtained by petition to the High Court or the Supreme Court of a State. Every ground on which a patent might at common law be repealed by *scire facias* is available as a ground of revocation. A petition for revocation may be presented by either (a) the Attorney-General or person authorised by him, (b) any person alleging that the patent was obtained in fraud of his rights or of the rights of any person under or through whom he claims, or (c) by any person alleging that he or any person under or through whom he claims an interest in any trade, business, or manufacture had publicly used, made, or sold within the Commonwealth before the date of the patent anything claimed by the patentee as his invention, or (d) any person alleging that he or any person under or through whom he claims was the actual inventor of any invention included in the claim of the patentee.

(viii.) *Compulsory Working and Licenses.* At any time not less than four years after the date of a patent, and not less than two years after the 13th December, 1911, any person may apply to the High Court or the Supreme Court of the State in which the Patent Office is situated for an order declaring that the patented article or process is not manufactured or carried on to an adequate extent in the Commonwealth. From and after the time when any such order may take effect, the patent is not deemed to be infringed by the manufacture or carrying on in the Commonwealth of the patented article or process, or by the vending within the Commonwealth of the patented article made within the Commonwealth. Any person interested may, after the expiration of two years from the granting of the patent, present a petition to the Commissioner alleging that the reasonable requirements of the public with respect to a patented invention have not been satisfied and praying for the grant of a compulsory license or, in the alternative, for the revocation of a patent. If the parties do not come to an arrangement between themselves, the Commissioner, on being satisfied that a *prima facie* case has been made out, must refer the petition to the High Court or the Supreme Court of the State in which the Patent Office is situated. If the Commissioner is not satisfied that a *prima facie* case has been made out he may dismiss the petition.

(ix.) *Restoration and Surrender of Patents.* The Act of 1906 provides for the restoration (under certain conditions) of applications for patents which may have lapsed through default of the applicant or of an officer of the Patent Office.

A patentee may surrender a State patent for an invention for which a Commonwealth patent has been granted in terms of section 7; or, by permission of the Commissioner, subject to the leave of the Court or consent of the parties in a petition for revocation, may surrender a Commonwealth patent.

(x.) *Contracts and Proceedings.* Subject to certain provisions specified in the amending Act of 1909, no patentee may enforce conditions of contract which will restrict the rights of the purchaser, lessee, or licensee from using any article or process supplied or owned by any person other than the patentee or from acquiring from the patentee any article not protected by the patent. Such contracts made prior to the Act of 1909 may be determined by three months' notice from either party.

Any person threatened by circular or advertisement with proceedings for infringement may apply for an injunction and damages, unless the threatening party shows due diligence in prosecuting an action.

(xi.) *International Protection of Patents.* The Patents Act contains provisions under which the international arrangements for the protection of patents contained in the Imperial Acts could be made applicable to the Commonwealth by order of the King-in-Council. The necessary proclamation was issued by the Imperial Government as regards England and Australia on the 1st February, 1907, and as regards all other countries in the International Convention on the 5th August, 1907. Applicants for patents, subject to the country in which first application is made being a party to the arrangement, are now, therefore, if they apply in Australia within twelve months of their first foreign application, entitled to receive patents for their inventions in priority to other applicants, and such patents have the same date as the date of the first application abroad. Corresponding arrangements have also been made by the Commonwealth with New Zealand.

(xii.) *Patent Attorneys.* Any person on passing the prescribed examination, and on paying a fee of £5, may be registered by the Commissioner as a patent attorney. A solicitor may practise as a patent attorney without passing the prescribed examination and without being registered as a patent attorney. No person may describe himself as a patent attorney, or as a patent agent, or as an agent for obtaining patents unless he is registered or entitled to practise as a patent attorney.

(xiii.) *Patent Office Publications.* Complete specifications are printed shortly after they become open to public inspection by acceptance, or under Section 121 of the Act. Each specification is open to public inspection. A number of publications, of which a list may be found in the Australian Official Journal of Patents, is on sale at the Government Printing Office, Melbourne.

The *Australian Official Journal of Patents* is issued weekly, and contains lists of applications and proceedings, with illustrated notes of accepted complete specifications. A supplementary annual volume contains statistics, indexes to names of persons concerned, classified indexes to subject matter of applications lodged, and a numerical index to proceedings on Commonwealth applications which have been advertised during the year; there are also name and numerical indexes to proceedings on State applications.

(xiv.) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Sealed, 1904 to 1911.* The numbers of individual inventions in respect of which applications were filed in the States or Commonwealth during each year from 1904 to 1911 inclusive are shewn in the following table. The number of applications accompanied by provisional specifications and the number of patents sealed in respect of applications made in each year are also shewn.

**PATENTS.—APPLICATIONS FILED AND LETTERS PATENT SEALED IN THE  
COMMONWEALTH, 1904 to 1911.**

Year	1904.*	1905.	1906.	1907.	1908.	1909.	1910.	1911.
No. of Applications	2,243	2,685	2,743	2,903	2,840	3,309	3,605	3,497
" accompanied by " provisional specifications	1,241	1,528	1,547	1,678	1,811	2,165	2,294	2,290
Letters patent sealed on applications of each year	1,198	1,468	1,536	1,563	1,407	1,727	1,486†	342†

\* From 13th February, 1904. † Up to the 30th December, 1911.

(xv.) *Revenue of Patent Office.* The revenue of the Commonwealth Patent Office for each year since its creation to the end of the year 1911 is shewn in the subjoined table.

### REVENUE OF COMMONWEALTH PATENT OFFICE, 1904 to 1911.

Particulars.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£	£	£
Fees collected under								
States Patents Acts ...	3,181	5,567	6,233	3,746	2,006	1,703	1,940	768
Patents Acts 1903-10 ...	2,459	13,379	14,667	13,612	14,146	14,087	17,042	19,640
Receipts from publications ...	...	102	134	155	146	216	208	237
Petty receipts ...	19	37	43	34	32	33	33	48
<b>Total ...</b>	<b>5,659</b>	<b>19,085</b>	<b>21,077</b>	<b>17,547</b>	<b>16,330</b>	<b>16,039</b>	<b>19,223</b>	<b>20,693</b>

3. **Copyright.**—Prior to the establishment of Federation the copyright legislation enacted by all the States except Tasmania, throughout which State Imperial legislation governed local productions, was based upon and closely followed the English law of copyright, differing, however, in some cases therefrom as to the periods for which a copyright was granted. Only local publications were affected by it. A colonial law did not affect the rights of authors and artists where copyright was acquired outside the colony.

(i.) *Copyright Acts.* The first Commonwealth Act was passed in 1905 (see page 41 hereinbefore). It deals with literary and artistic copyrights, performing right and lecturing right. It may be applied, by registration under the Act, to any copyright or performing right in any literary, musical or dramatic work, or artistic work, entitled to protection in Australia by virtue of any Act of the Parliament of the United Kingdom, or entitled to protection in any State by virtue of any State Copyright Act.

(ii.) *Principal Features.* The principal feature of the Australian Act is that it provides the same duration of right under the above heads, namely, the life of the author and seven years thereafter, or forty-two years from publication, whichever be the longer. Copyright subsists in every book, whether the author be a British subject or not, which has been printed in type, set up in Australia, or plates made therefrom, or from plates or negatives made in Australia in cases where type is not necessarily used, and has, after the commencement of the Act, been published in Australia, before or simultaneously with its first publication elsewhere. With respect to lectures, it is provided that the author shall be the first owner of the lecturing right, and that he may prevent publication of a report of the lecture by giving notice orally at the beginning of the lecture, or by a conspicuous written notice on the entrance door or in the lecture-room stating that reporting is prohibited. The owner of the copyright in a book may be requested by the Minister, on application being made by any person desirous of translating such book, to make a translation thereof, if it be not translated within ten years of publication. If the owner of the copyright fail to comply with such request the Minister may confer the right of translation into a particular language upon the person making the application. The person ordering a photograph for which consideration is paid is the owner of the copyright in it.

An important feature of the Copyright Act is that provision is made whereby the owner of the copyright in any book or artistic work, or his agent, may, by notice in the prescribed form, require any person to deliver up to him any pirated reproduction of the book or work, and similarly the owner of the performing right in a musical or dramatic work, or his agent, may forbid the performance of the work in infringement of his right,



and may require any person to refrain from performing or taking part in the performance of the musical or dramatic work specified. Any person failing to observe the requirements of any notice served under these provisions is liable to a penalty not exceeding £10.

(iii.) *Registration.* Registration is a necessary preliminary to an action for infringement, but copyright exists independently of registration. The Commissioner of Patents has been appointed "Registrar of Copyrights." Proceedings for the rectification of the register may be taken before the Supreme Court of any State. In the matters of copyright the Commonwealth is a party to the Berne Convention.

Particulars of applications for registration of copyrights and of the revenue derived therefrom are given in paragraph 6 hereof.

4. *Trade Marks.*—The remarks made concerning the unification of the patent system of the Commonwealth apply equally to trade marks. Under the Trade Marks Act 1905, which came into force on the 2nd July, 1906, the Commissioner of Patents is appointed to act also as "Registrar of Trade Marks." There are two trade marks, viz., the "Workers' Trade Mark" and the "Commonwealth Trade Mark," for which special provisions are contained in the Act; the provisions regarding the former of these two Trade Marks have, however, been held to be unconstitutional (see p. 1069 *ante*). The part of the Act governing the registration and application of the Commonwealth Trade Mark, applies to all goods included in or specified by a resolution passed by both Houses of Parliament that the conditions as to remuneration of labour in connection with their manufacture are fair and reasonable.

(i.) *Essential Particulars of Trade Marks.* A registrable trade mark must consist of essential particulars with or without additional matter. The essential particulars must be one or more of the following:—(a) A name or trading style of a person printed, impressed, or woven, in some particular and distinctive manner; (b) a written signature, or copy of a written signature of the person applying for registration thereof or of some predecessor in his business; (c) a distinctive device, mark, brand, heading, label, or ticket; (d) or invented word or invented words; (e) a word or words having no reference to the character or quality of the goods, and not being a geographical name used or likely to be understood in a geographical sense. The additional matter which may be added shall be either (a) any letters, words, or figures or (b) any combination of letters, words, or figures or any of them.

(ii.) *State Registrations.* State registrations cease to be in force at the expiration of fourteen years from the date of the Commonwealth Act, or at the time when, under the State Trade Marks Act, the trade mark would, if after the commencement of the Commonwealth Act no fee for the continuance of its registration were paid, first become liable to removal from the register, whichever first happens. It is also provided that no fee shall be receivable nor shall any act be done after the commencement of the Commonwealth Act for the continuance of the registration of a trade mark under a State Act. Commonwealth registration of a State registered mark may be effected, and the fact of its registration in a State prior to the coming into force of the Commonwealth Act, may entitle the registered proprietor in the State to Commonwealth registration, notwithstanding the existence of defects which might be ground for refusal of an application for the registration of a new trade mark.

(iii.) *Duration of Registration and General Provisions.* The registration of a trade mark is for a period of fourteen years, but may be renewed from time to time. International and intercolonial arrangements for the mutual protection of trade marks may be made in a manner similar to that provided for the protection of patents. In this regard Australia has become a party to the International Convention for the protection of industrial property. Registration may be opposed by any person lodging a notice of opposition at the Trade Marks Office within three months after the advertisement of the application, or such further time, not exceeding three months, as may be allowed.

(iv.) *Publications.* The *Australian Official Journal of Trade Marks* is issued weekly, and contains lists of applications and proceedings, with representations of marks (when

accepted) sought to be registered. *Copyrights.* An index of owners of literary, artistic, and international or State copyright, together with an alphabetically-arranged list of the subjects of works, is published in the official journal of trade marks, and, at the end of each year, published in consolidated form. *Designs.* Information corresponding with that given for copyrights is published. Indexes to names of applicants and subject matter of applications are compiled and are on sale.

5. **Designs.**—The Designs Act of 1906 came into operation on the 1st January, 1907. Under this Act a Commonwealth Designs Office has been established and the Commissioner of Patents appointed "Registrar of Designs."

(i.) *Registration.* Any new and original design which has not been published in Australia before the lodging of an application for its registration may be registered in respect of all or any of the articles enumerated in the classification contained in the regulations, which comprise jewellery, paperhangings, carpets, floor-cloths, lace, hosiery, millinery, wearing apparel, textile fabrics, bookbinding, and articles composed wholly or chiefly of a variety of solid substances. A separate application must be made in respect of each class in which the owner of the design desires it to be registered. After an application for the registration of a design has been lodged the design may be published and used without prejudice to the validity of the registration.

(ii.) *Duration of Copyright in Designs.* The registration takes effect as from the date of the lodging of the application, and, subject to the provisions of the Act, remains in force for a period of five years from that date. The owner of a registered design must, within two years after registration, substantially use the design, or cause it to be used, in Australia, and if he fails to do so the copyright ceases. If, however, such design is used in any manufacture abroad the above period is limited to six months.

(iii.) *General.* The Act also contains provisions regarding the remedies for infringement of designs and the rectification of the register. Arrangements for the international and intercolonial protection of copyright in designs were made by the same proclamation referred to above with regard to patents and trade marks. The owner of a registered design must cause each article to which the design is applied to be marked before delivery for sale with the prescribed mark to denote that the design is registered.

6. **Applications for Copyrights, Trade Marks, and Designs.**—The following table gives particulars of copyright, trade mark, and design applications received and registered under the Commonwealth Acts from 1907 to 1911 inclusive:—

**COPYRIGHT, TRADE MARK, AND DESIGN APPLICATIONS RECEIVED AND REGISTERED UNDER COMMONWEALTH ACTS, 1907 to 1911.**

Year.	Copyrights.				Trade Marks.	Designs.	
	Literary.	Artistic.	International	Total.			
APPLICATIONS RECEIVED.							
1907	...	372	346	7	725	2,065	176
1908	...	479	581	46	1,106	1,580	155
1909	...	474	518	14	1,006	1,688	187
1910	...	464	569	6	1,039	1,729	186
1911	...	440	466	15	921	1,977	203
APPLICATIONS REGISTERED.							
1907	...	227	208	...	435	1,395	77
1908	...	382	359	21	762	3,150	180
1909	...	412	527	4	943	1,455	166
1910	...	361	495	12	868	1,190	160
1911	...	379	412	11	802	1,323	180

The following table shews the revenue of the Copyright, Trade Mark, and Design Office during the years 1909, 1910, and 1911:—

**REVENUE OF COPYRIGHT, TRADE MARK, AND DESIGN OFFICE, 1909 to 1911.**

Particulars.	1909.					1910.					1911.				
	Copy- rights.	Trade Marks.	Desig's	Publi- cations	Total.	Copy- rights.	Trade Marks.	Desig's	Publi- cations	Total.	Copy- rights.	Trade Marks.	Desig's	Publi- cations	Total.
Fees collected under State Acts	£ 4	£ 61	£ ...	£ ...	£ 65	£ 1	£ 164	£ ...	£ ...	£ 165	£ 1	£ 56	£ ...	£ ...	£ 57
Fees collected under Cwth. Acts	145	4,893	170	117	5,325	163	4,655	171	90	5,079	142	5,018	180	127	5,467
Total ...	149	4,954	170	117	5,390	164	4,819	171	90	5,244	143	5,074	180	127	5,524

In addition to the applications for copyright received and registered under the Commonwealth Act, as specified in the first table of this paragraph, certain applications for registration of copyrights under State Acts were received and registered. The following table gives particulars of such applications for the years 1907 to 1911:—

**APPLICATIONS FOR REGISTRATION OF COPYRIGHT UNDER STATE ACTS, 1907 to 1911.**

Year.	N.S.W.		Victoria.		Queensland.		S. Australia.		W. Australia.		Tasmania.	
	Literary.	Artistic.	Literary.	Artistic.	Literary.	Artistic.	Literary.	Artistic.	Literary.	Artistic.	Literary.	Artistic.

**APPLICATIONS RECEIVED.**

1907	...	4	2	19	...	...	...	1	...	1	...	...
1908	4	2	4	8	...	...	...	1	...	...	...	...
1909	...	...	8	4	...	...	...	...	...	...	...	...
1910	...	...	2	5	...	...	...	...	...	...	...	...
1911	...	...	1	...	...	...	...	...	...	...	...	...

**APPLICATIONS REGISTERED.**

1907	...	...	2	19	...	...	...	1	1	...	...	...
1908	4	2	3	1	...	...	...	1	...	...	...	...
1909	...	...	9	11	...	...	...	...	...	...	...	...
1910	...	...	2	1	...	...	...	...	...	...	...	...
1911	...	...	1	...	...	...	...	...	...	...	...	...

**§ 3. Old-age Pensions.**

1. **General.**—A system for providing for the relief of the aged poor by some means which did not involve the stigma associated in so many minds with the idea of charitable aid, and which, while protecting the recipients from actual want, still left to them as large a degree of freedom as possible, has long been sought for by economists, statesmen, and social reformers. The difficulties surrounding a satisfactory solution of the question are numerous and great, and various schemes have been propounded with the object of overcoming them. Two of the principal objections which have been urged against the introduction of a general system of old-age pensions are—

- (i.) its costliness;
- (ii.) its tendency to induce thriftlessness.

The former is undoubtedly a serious difficulty, since in any normally constituted population the number of persons aged say sixty-five years and upwards will represent

about 5 per cent. of the total population, and the provision of the funds required to pay to these a sum which would provide them with even the barest necessities of life would be a very considerable burden upon the State Treasury. To limit this amount various suggestions have been made, of which probably the most effective have been those which provide, the one for a contribution to the pension fund by the pensioner during his earlier years, and the other for a reduction of the amount of pension payable to those in receipt of income from other sources. The former of these is the principle which has been acted upon in the scheme in operation in Germany, while the latter is that which underlies the schemes in vogue in the Commonwealth, New Zealand, and the United Kingdom.

The objection which has sometimes been raised to the payment of old-age pensions on the score of the tendency to thriftlessness thereby induced is one which, in Australia, at all events, is not accorded much weight, the general feeling being that the number of cases in which the prospect of a pension of, say, 10s. per week from sixty-five onwards would lead to thriftlessness in earlier years, is so small as to be practically negligible.

**2. Introduction of Old-age Pensions into Australia.**—The credit of introducing old-age pensions into the Southern Hemisphere belongs, not to the Commonwealth, but to her sister dependency, the Dominion of New Zealand, where pensions have been payable since 1st April, 1898. The first State of the Commonwealth to make provision for the payment of old-age pensions was Victoria, whose legislation on the subject came into operation on 18th January, 1901. Later in the same year, viz., on 1st August, 1901, the pension system of New South Wales came into force, while in the case of Queensland old-age pensions became payable from 1st July, 1908. Finally, an Act providing for the payment of old-age pensions throughout Australia was passed by the Commonwealth Parliament in 1908, pension payments thereunder commencing on 1st July, 1909. This Act superseded the State Acts in so far as provision for old-age is concerned.

**3. Commencement of Commonwealth Act.**—The Commonwealth Invalid and Old-age Pensions Act was assented to on the 10th June, 1908, and payment of old-age pensions commenced as from 1st July, 1909. Provision is also made in the Act for the payment of invalid pensions. The part of the Act relating thereto, however, did not come into operation on the commencement of the Act, but it was provided that it should commence on some subsequent date to be fixed by proclamation. This proclamation was made on the 19th November, 1910, the first payments thereunder being made on the 15th December, 1910.

**4. Administration of Commonwealth Act.**—The general administration of the Act is, subject to the control of the Minister, placed in the hands of the Commissioner of Pensions, who is assisted by a Deputy Commissioner appointed in each State. Power is given to the Commissioner and the Deputy Commissioners to summon witnesses, receive evidence on oath, and require the production of documents for the purposes of the Act.

Each State is divided into districts, each of which is placed in charge of a Registrar, whose duties consist in receiving and investigating pension claims and in keeping such books and registers as are required for carrying out the provisions of the Act.

**5. Pension Age.**—For an old-age pension the age qualification is similar to that previously in force in New South Wales under the State Act, viz., attainment of the age of sixty-five years, or, in the event of permanent incapacitation for work, attainment of the age of sixty years. The Act also provides that the age qualification for women may be fixed by proclamation at sixty years instead of sixty-five. This proclamation was made on the 19th November, 1910, the first payments thereunder being made on the 15th December, 1910. For an invalid pension the age qualification is attainment of the age of sixteen years if accompanied by permanent incapacitation for work.

**6. Length of Residence.**—In the original Act of 1908 the residential qualification for an old-age pension was the same as that of the New South Wales Act, viz., continuous residence for twenty-five years. Owing, however, to the fact that in the other two States in which pensions were payable under the State régime the residential qualification was only twenty years, an amendment of the Act was passed by the Federal Parliament in August, 1909, reducing the Commonwealth term to twenty years also, thus diminishing the chance of lapse of pension through transfer from State to Commonwealth. For an invalid pension continuous residence for at least five years is required. In neither case, however, is continuous residence in Australia deemed to have been interrupted by occasional absences not exceeding in the aggregate one tenth of the total period of residence. The applicant for any pension must be residing in Australia on the date when he makes his claim, and in the case of an invalid pension must have been incapacitated while in Australia.

**7. Rates of Pension.**—The rate of pension payable, whether for old age or invalidity, is required by the Act to be determined by the Commissioner or one of the Deputy Commissioners, and is to be fixed at such amount as he deems reasonable and sufficient, having regard to all the circumstances of the case, but must not exceed £26 per annum in any event, nor be at such a rate as will make the pensioner's income, together with pension, exceed £52 per annum.

**8. Limitations in respect of Income and Property.**—With a view to restricting the pensions to persons actually needing assistance, provision was made in all the State Acts reducing the payment when the applicant already possessed income or property above a given amount. This principle is also embodied in the Commonwealth Act. In the case of independent income it has already been mentioned that the pension payment must be so modified that the aggregate income, inclusive of pension, does not exceed £52 per annum. Payments received by way of benefit from any registered friendly society, or during illness, infirmity, or old age from any trade union, provident society, or other society or association, are not, for the purposes of the Commonwealth Act, treated as income. As regards accumulated property, the pension is subject to a deduction of £1 per annum for every complete £10 by which the net capital value of the property exceeds £50, except where the property includes a home in which the pensioner permanently resides, and which produces no income, in which case a net capital value of £100 is allowed prior to the pension deduction coming into operation. Accumulated property, whether in or out of Australia, to the value of £310 or upwards will disqualify for a pension, as will also an applicant's direct or indirect deprivation of himself of such property with the object of obtaining a pension. In the case of husband and wife, except where they are living apart pursuant to any decree, judgment, order or deed of separation, the net capital value of the accumulated property of each is deemed to be half the total net capital value of the accumulated property of both, and the amount of property in such case allowed prior to deduction is £50 if including, and £25 if not including a home.

**9. Character of Applicant for Pension.**—In all the State Acts provision was made that the recipients of old-age pensions should be persons of good moral character, and, in New South Wales and Victoria, imprisonment for extended periods would act as a disqualification. In the Commonwealth Act it is also provided that "no person shall receive an old-age pension unless he is of good character," but a similar provision is not made in the case of invalidity.

**10. Number of Commonwealth Claims and Old-age Pensions.**—During the first year of practical working of the Commonwealth Act, viz., that ended 30th June, 1910, the number of cases considered was 76,168. Of these 39,875 were cases in which a State old-age pension was exchanged for one payable by the Commonwealth. The remaining 36,293 were new applications received during the year, of which 30,526 were granted, 3921 were rejected, and 1846 were still in course of consideration on 30th June,

1910. During the year ending 30th June, 1911, a further number of 20,260 were considered. Details of the several States are as follows :—

**COMMONWEALTH OLD-AGE PENSION BUSINESS.—YEAR ENDED 30th JUNE, 1911.**

State.	New Applications during 1910-11.				Total Cases Considered since Inception.	Total Claims Admitted since Inception.
	Granted.	Rejected.	In Course of Consideration.	Total Received.		
New South Wales ...	5,447	951	588	6,986	35,866	32,468
Victoria ...	5,730	663	466	6,859	30,426	27,627
Queensland ...	2,103	459	166	2,728	12,601	11,302
South Australia ...	1,476	31	109	1,616	8,706	7,807
Western Australia ...	797	56	38	891	3,883	3,312
Tasmania ...	912	116	152	1,180	4,946	4,350
Commonwealth ...	16,465	2,276	1,519	20,260	96,428	86,866

11. **Old-age Pensions Current on 30th June, 1911.**—The total number of pensions current on 30th June, 1911, was 75,502, or 11,364 less than the number of claims admitted, due to the fact that 10,169 pensions lapsed by death, and 1195 by cancellation since the beginning of the business. Details for the several States are as follows :—

**COMMONWEALTH OLD-AGE PENSIONS CURRENT, 30th JUNE, 1911.**

State.	Total Claims Admitted.	Discontinuance by		Pensions current on 30th June, 1911.	
		Death.	Cancellation.	Number.	Per 1000 of Population.
New South Wales ...	32,468	3,780	528	28,160	17.13
Victoria ...	27,627	3,618	292	23,722	18.23
Queensland ...	11,302	1,201	207	9,894	16.52
South Australia ...	7,807	824	98	6,885	16.79
Western Australia ...	3,312	292	44	2,976	10.75
Tasmania ...	4,350	459	26	3,865	19.94
Total ...	86,866	10,169	1,195	75,502	17.06

12. **Sexes of Old-age Pensioners.**—Of the 75,502 persons in receipt of pension at 30th June, 1911, 34,811 (or 46 per cent.) were male, and 40,691 (or 54 per cent.) were female. Details for the several States are as follows :—

**SEXES OF PENSIONERS, 30th JUNE, 1911.**

State.	Males.	Females.	Total.	*Masculinity.
New South Wales ...	13,588	14,572	28,160	93.25
Victoria ...	10,444	13,278	23,722	78.66
Queensland ...	5,057	4,837	9,894	104.55
South Australia ...	2,751	4,134	6,885	66.55
Western Australia ...	1,534	1,442	2,976	106.38
Tasmania ...	1,437	2,428	3,865	59.18
Total ...	34,811	40,691	75,502	85.55

\* Number of males to each 100 females.

**13. Ages and Conjugal Condition of Old-age Pensioners Admitted during 1910-11.**

—The recorded ages of the 16,465 persons to whom pensions were granted during the year 1910-11 varied considerably, ranging from 777 at age 60 to 3 at age 96. Particulars for quinquennial age groups are as follows :—

**AGES AND CONJUGAL CONDITION OF PENSIONERS ADMITTED DURING 1910-11.**

Age at Admission.	Males				Females.				Grand Total.
	Single.	Married.	Widowed	Total.	Single.	Married.	Widowed	Total.	
60-64 ... ..	156	405	126	687	322	2,203	2,424	4,949	5,636
65-69 ... ..	707	1,748	706	3,161	257	1,448	1,633	3,338	6,499
70-74 ... ..	331	703	360	1,394	56	386	627	1,069	2,463
75-79 ... ..	120	292	221	633	33	151	406	590	1,223
80-84 ... ..	31	92	90	213	11	35	204	250	463
85-89 ... ..	6	16	27	49	5	12	75	92	141
90-94 ... ..	1	6	8	15	...	3	16	19	34
95-99 ... ..	...	1	1	2	...	...	4	4	6
Total ... ..	1,352	3,263	1,539	6,154	684	4,238	5,389	10,311	16,465

**14. Commonwealth Claims for Invalid Pensions.**—Invalid pensions first became payable on 15th December, 1910, and on 30th June, 1911, 9906 cases had been investigated. These consisted of 3609 cases taken over from the States under Section 35 of the Act, and 6297 new claims received. Of the latter number 4164 were granted. 1350 were rejected, and 783 were awaiting consideration on 30th June, 1911. Particulars for the different States are as follows :—

**INVALID PENSION BUSINESS.—YEAR ENDED 30th JUNE, 1911.**

State.	State Pensions taken over by C'wealth.	New Applications to 30th June, 1911.				Total Cases Con-sidered.	Total Claims Admitted during Year.
		Granted.	Rejected.	In Course of Con-sideration.	Total Received.		
N.S.W. ... ..	3,498	565	408	334	1,307	4,805	4,063
Victoria ... ..	111	2,123	508	177	2,808	2,919	2,234
Queensland ... ..	...	515	198	64	777	777	515
South Australia ... ..	...	365	79	78	522	522	365
West. Australia ... ..	...	184	87	42	313	313	184
Tasmania ... ..	...	412	70	88	570	570	412
Commonwealth	3,609	4,164	1,350	783	6,297	9,906	7,773

**15. Invalid Pensions Current on 30th June, 1911.**—The 4164 claims granted and the 3609 cases taken from the States constitute 7773 pensions admitted. From this number must be deducted 322, including 226 deaths in the period under review, and 96 cancellations. This leaves 7451 as the number of invalid pensions current on 30th June, 1911. This, it may be noted, includes 19 cases of special allowance granted to blind persons who are not entirely incapacitated for work. Details for the several States are follows :—

## INVALID PENSIONS CURRENT ON 30th JUNE, 1911.

State.	Claims Admitted.	Discontinuance by		Pensions current on 30th June, 1911.	
		Death.	Cancel- lation.	Number.	Per 1000 of Population.
New South Wales ... ..	4,063	135	84	3,844	2.31
Victoria ... ..	2,234	48	3	2,183	1.68
Queensland ... ..	515	20	3	492	0.82
South Australia ... ..	365	11	2	352	0.86
Western Australia ... ..	184	4	1	179	0.65
Tasmania ... ..	412	8	3	401	2.07
Commonwealth ... ..	7,773	226	96	7,451	1.68

16. **Sexes of Invalid Pensioners.**—Of the 7451 persons in receipt of an invalid pension on 30th June, 1911, 3833 or 51½ per cent. were male, and 3618 or 48½ per cent. were female. Details for the several States are as follows :—

## SEXES OF INVALID PENSIONERS, 30th JUNE, 1911.

State.	Males.	Females.	Total.	*Masculinity.
New South Wales ... ..	1,975	1,869	3,844	105.67
Victoria ... ..	1,101	1,082	2,183	101.76
Queensland ... ..	282	210	492	134.29
South Australia ... ..	175	177	352	98.87
Western Australia ... ..	106	73	179	145.21
Tasmania ... ..	194	207	401	93.72
Commonwealth ... ..	3,833	3,618	7,451	105.94

\* Number of males per 100 females.

17. **Ages and Conjugal Condition of Invalid Pensioners Admitted during 1910-11.**—The recorded ages of the 4164 persons who received invalid pensions in the period under review varied from 16 to 87. The following table gives particulars in decennial age groups after age 20.

## AGE AND CONJUGAL CONDITION OF INVALID PENSIONERS ADMITTED IN 1910-11.

Age at Admission.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed	Total.	Single.	Married.	Widowed	Total.	
16-19 ... ..	72	...	...	72	72	...	...	72	144
20-29 ... ..	253	24	...	277	259	6	3	268	545
30-39 ... ..	205	99	4	308	238	33	18	289	597
40-49 ... ..	208	270	20	498	243	78	90	411	909
50-59 ... ..	256	427	65	743	212	242	350	604	1,552
60-69 ... ..	72	110	20	202	24	45	74	143	345
70-79 ... ..	5	11	6	22	4	8	20	32	54
80 ... ..	2	2	3	7	2	...	9	11	18
Total ... ..	1,073	943	118	2,134	1,054	412	564	2,030	4,164



18. **Cost of Administration.**—Under the State régime the cost of administration differed considerably in the several States, and for 1908-9 represented in New South Wales 4.17 per cent. of the amount actually paid in pensions. In Victoria for the same year the corresponding percentage was 0.70. During the year 1910-11 the total cost to the Commonwealth of administering the Old-age and Invalid Pensions Department was £39,244, or 2.10 per cent. of the amount actually paid in pensions. As this total includes the cost of initiating the system in the three States of South Australia, Western Australia, and Tasmania, as well as extending it in the other three States, it is probable that the cost of administration in future years will represent a smaller percentage on the amount paid in pensions. Details concerning the cost of administration for 1910-11 are as follows:—

	£
Salaries ... ..	10,023
Temporary assistance ... ..	1,960
Services of magistrates, registrars, clerks of courts, and police ...	6,149
Commission to Postmaster-General's Dept., at 12s. 6d. per £100 paid	11,541
Postage and telegrams ... ..	2,674
Other expenses ... ..	6,897
	<hr/> 39,244

The actual sum disbursed in Old-age and Invalid Pensions in the financial year 1910-11, apart from the cost of administration, was approximately £1,868,648.

19. **Estimated Cost of Commonwealth Old-age Pension Scheme.**—In the first two issues of the Year Book estimates of the probable cost of the Commonwealth scheme were given. The former of these, based largely on the old-age pension experience of New South Wales, taken in conjunction with the census results of 31st March, 1901, and the subsequent estimates of increase of population, brought out a sum of £1,580,000 as representing the probable cost, including administration, if the New South Wales scheme had operated throughout the Commonwealth during 1906-7. In the second issue of the Year Book the results of a more extensive investigation were published. These were obtained from an analysis of the New Zealand old-age pension experience, combined with the Australian Census results of 1881, 1891 and 1901, and gave an estimate for each year from 1909-10 to 1926-7 of the probable cost, including administration, of the Commonwealth scheme as provided in the original Act. The figures so obtained for the year 1909-10, were £1,440,000; for 1914-15, £1,616,000, and for 1919-20, £1,854,000. The reduction of the residential qualification from 25 to 20 years under the Amending Act of 1909, had the effect of somewhat increasing the number eligible for pensions, and consequently of increasing the probable cost. The extent of this increase was estimated at 4 per cent., and in the third issue of the Year Book the estimated cost under the present system, on the assumption that the Commonwealth conditions would not differ materially from those of New Zealand, was given as follows:—1909-10, £1,498,000; 1914-15, £1,681,000; and 1919-20, £1,928,000. It will be seen that the actual cost for 1909-10, inclusive of administration, viz., £1,534,476, exceeded this last estimate by £36,476, or practically by the cost of administration.

With reference to the probable cost of invalidity pensions for the Commonwealth, the only experience available is that of New South Wales, where the number in force on 30th June, 1909, was 3714, and the cost, inclusive of administration, was approximately £79,200. On this basis, the cost of such a scheme for the Commonwealth, as a whole, may be roughly estimated at about £210,000 per annum for the present, increasing in subsequent years probably in proportion to the population.

20. **Liability Undertaken in Granting Old-age Pensions.**—As an indication of the extent of the responsibility which an old-age pension scheme involves, it may be mentioned that in connection with the evidence tendered to the Commonwealth Commission

on Old-age Pensions a computation was made of the total liability in respect of accrued pensions which the Commonwealth would have incurred if, at 31st March, 1901, the date of the Census, 39 per cent. of the persons aged sixty-five and upwards were entitled to pensions of ten shillings per week. The present value at that date of the liability so computed was £10,415,820. (See Minutes of Evidence of Royal Commission on Old-age Pensions, p. 80.)

#### 4. Local Option.

1. **General.**—The principles of local option as to the sale of fermented and spirituous liquors have been applied in all the States of the Commonwealth. The last State to adopt those principles was Western Australia, where provision was made for a system of local option by the Licensing Act 1911.

2. **New South Wales.**—The Acts in force relating to local option in this State are the Liquor Amendment Acts 1905 and 1907. There were formerly two Acts which dealt with the subject, viz., the Licensing Acts 1882 and 1883, consolidated by the Liquor Act 1898. Under the Act of 1905, which came into force on the 1st January, 1906, the local option vote is to be taken in every electorate on the day fixed for the poll therein at each general election. The option with regard to licenses extends to publichouses, wineshops, and clubs, and the persons entitled to vote are those entered on the Parliamentary electoral rolls.

(i.) *Resolutions to be Submitted.* Except where resolution (c)—see below—has previously been carried, and is in force in an electorate, the following resolutions are to be submitted:—(a) That the number of existing licenses continue. (b) That the number of existing licenses be reduced. (c) That no licenses be granted in the electorate. Where resolution (c) has previously been carried the resolution to be submitted is:—(d) That licenses be restored in the electorate. Resolutions (a) and (b) are carried by a simple majority of the votes given, but neither resolutions (c) nor (d) will be carried unless at least three-fifths of the votes given are in favour thereof, whilst at least 30 per cent. of the number of electors on the rolls must vote for such resolution. If resolution (c) is not carried, the votes given in favour of that resolution are to be added to the votes given for resolution b).

(ii.) *Effects of Resolutions.* The effects of carrying the resolutions are as follows:—If resolution (a) is carried, the number of licenses may not exceed the number at the time of taking the vote. If resolution (b) is carried, the number of licenses must be reduced, and may be reduced to three-fourths the number at the time of voting. If resolution (c) is carried, no licenses may be granted, renewed, or transferred. If resolution (d) is carried, licenses may be granted, renewed, and transferred, but so that the number of licenses is not greater than the number held when resolution (c) was carried, nor less than half such number.

For the purpose of effecting a reduction under resolution (b), a special court determines the reduction to be made in the number of existing licenses, and decides which premises are to be closed. The best conducted premises are given a preference over others. If resolution (c) is carried, it is to take effect at the expiration of three years from the date of the vote.

(iii.) *Local Option Votes, 1907 and 1910.* The first local option vote under the Act of 1905 was taken at the general election in 1907, and the second at the election in 1910. The following statement shews the number of electorates in which each of the resolutions was carried:—

## NEW SOUTH WALES.—EFFECTS OF LOCAL OPTION VOTES, 1907 and 1910.

Particulars.	General Election, 1907.		General Election, 1910.	
	Number of Electorates.	Number of Votes.	Number of Electorates.	Number of Votes.
<i>Results in favour of—</i>				
(a) Continuance ... ..	25	209,384	76	324,973
(b) Reduction ... ..	65	75,706	14	38,856
(c) No license ... ..	Nil	178,580	Nil	212,889

3. **Victoria.**—The Acts dealing with the subject of local option as to the sale of fermented and spirituous liquors, and with the compulsory closing of hotels in this State are the Licensing Acts 1890, 1906, and 1907. Other Acts, now repealed, which dealt with the subject are the Licensing Acts 1876, 1885, and 1888.

The last division of the Act of 1906 relates to the subject of local option; this division, however, does not come into force until the 1st January, 1917. In the meantime, in order to reduce the number of victuallers' licenses in Victoria, a Licenses Reduction Board is constituted.

(i.) *The Licenses Reduction Board.* Although the operations of this Board are not conducted in accordance with the principles of local option, the duties of the Board are, until the 31st December, 1916, after which date a system of local option comes into force under the Act of 1906, to reduce the number of licenses in excess of the statutory number, and to award compensation according to the scheme provided for by that Act. The Board consists of three members at a salary of £800 per annum each, who may not engage in any business or employment other than the duties of their office as members of the Board. The Board was first appointed on the 21st May, 1907. A Compensation Fund has also been established under the Act, and is raised by means of a compensation fee at the rate of 3 per cent. on the value of liquor purchased by every licensed victualler. The owner of the premises is chargeable with two-thirds, and the tenant with one-third of the compensation fee. The total amount paid into the Compensation Fund was £48,233 for the year 1907, £48,543 for 1908, £49,300 for 1909, £48,875 for 1910, and £51,716 for 1911. When any reduction of licensed premises has been made, the remaining hotels, which will be benefited, are to bear a *pro rata* assessment to make up the amount of license fees lost. The amount so lost up to the end of the year 1911 was £7885, which sum has been apportioned among 1642 hotels in proportion to the benefit which, in the opinion of the Board, they will derive from the closing. The maximum compensation, which is payable out of the Compensation Fund referred to above, is to be based on the results of the three years preceding the 31st December, 1906, in the case of owners, and of the three years preceding the 31st December, 1905, in the case of licensees. Up to the 31st December, 1911, 512 hotels had been closed by the Board, 151 of this number having surrendered their licenses. In all cases compensation, where claimed, was awarded, the total paid amounting to £243,443, or an average of £475 each. 144 of these hotels were situated in the metropolitan district, while the remaining 368 were in country districts. In 93 cases no claims for compensation were made by the licensees. The following table shews particulars of the operations of the Board up to the 31st December, 1911.

## VICTORIA.—OPERATIONS OF LICENSES REDUCTION BOARD, 31st DECEMBER, 1911.

Particulars.	Licenses in December, 1906.			Hotels Deprived of Licenses	Compensation Awarded.		Hotels Surrendered.	Compensation Awarded.	
	Number in Existence.	Statutory Number.	Number in Excess.		Owner.	Licensee.		Owner.	Licensee.
Metropolitan & Suburban Country	1,020 2,440	877 1,622	401 976	140 213	£ 102,155 74,664	£ 17,548 12,271	4 155	£ 3,091 29,813	£ 599 3,302
Total ...	3,460	2,499	1,377	353	176,819	29,819	159	32,904	3,901

\* In some districts the number of hotels was below the statutory number; in these districts the total number of hotels less than the statutory number was 418.

No reduction of any licensed premises is allowed in any licensing district in which the number of licensed premises is below the statutory number, but new licenses may, until 1917, be granted in such districts provided that a majority of the electors vote in favour of the increase, and that at least one-third of the number of electors on the roll record their votes. In such districts the total number of hotels below the statutory number allowed was 418 at 31st December, 1911.

Where a deprivation sitting is held before 30th June the Acts specify that a deprived license expiring on or before the 31st December following shall not be renewed. Where the sitting takes place after 30th June the license may be renewed for a period making in all six months from the first day of such sitting. To avoid difficulties on this score the Board holds its deprivation sittings in the first half of the year and its compensation and re-allotment sittings in the second half. Surrenders take effect on the date fixed by the Board at the time of acceptance.

Up to 30th June, 1912, the Board had deprived 94 hotels of their licenses in addition to those scheduled above, of which 17 licenses were surrendered. Grand total, 606.

(ii.) *Local Option Resolutions.* A local option vote of the electors is to be taken in every electoral district for the Legislative Assembly on the day fixed for the poll at each general election after the 1st January, 1917. The resolutions to be submitted, the majorities necessary, and the effects of carrying the resolutions are the same as specified in the case of New South Wales. Where any license existing before the 1st February, 1886, is cancelled as the result of a local option vote, the owner and licensee have each a claim to be paid out of the Compensation Fund, but only to the extent that such fund is from time to time available. If it appear to the Treasurer that there is not sufficient money in the fund to meet the claims, he may require every licensed victualler in Victoria to pay an additional compensation fee in order to satisfy the claims.

4. **Queensland.**—In Queensland the subject of local option is dealt with in Part VI. (sections 114 to 126) of the Licensing Act 1885. The provisions of that part of the Act may be applied in any municipality or division, or any subdivision of either, or in any other area which forms part of a municipality or division, and also forms part of one licensing district.

(i.) *Resolutions to be Submitted.* Any number, not less than one-sixth, of the ratepayers in an area may, by notice in writing, require the chairman of the local authority to take a poll of the ratepayers for or against the adoption of all or any of the following resolutions to have effect within the area, viz.:—(a) That the sale of intoxicating liquors be prohibited. (b) That the number of licenses be reduced to a certain number, specified in the notice, not less than two-thirds of the existing number. (c) That no new licenses be granted. The persons entitled to vote are those whose names are on the voters' roll or rate-book of the municipality or division of which the area forms part, as rated in respect of property within the area. Resolutions (b) and (c) may be carried by a simple majority, but resolution (a) cannot be carried unless "a majority of two-thirds of the votes recorded in respect of that resolution . . . is in favour of its adoption."

(ii.) *Effects of Resolutions.* If resolution (a) is adopted, it comes into force on the 30th June in the year following that in which the notice requiring the poll was given. If (b) is adopted, the licensing authority must restrict the total number of licenses and certificates granted or renewed to or within the number specified. If resolution (c) is adopted the licensing authority may not grant any new certificates for a licensed victualler's license or wine-seller's license.

(iii.) *Re-submission of Resolutions.* If resolution (a) is adopted, a poll may not be demanded again until after the expiration of three years from the date of adoption, and in such case a poll may be taken on resolution (a) only. If (b) is adopted, a poll may be again demanded on it or on the question of a further reduction, or on the adoption of the resolutions (a) or (c), but not until the expiration of two years after the last poll was taken. If resolution (c) is adopted, a poll may again be demanded on it or on resolutions (a) or (b), but not until the expiration of two years after the last poll was taken. If all the resolutions are rejected, a poll may not be demanded again until after the expiration of two years from the date of the last poll.

(iv.) *Resolutions Adopted, 1911.* At the end of the year 1911, resolution (a) was in force in one area in Queensland, viz., Tiaro shire, Bauple district. Up to the same date a poll as to resolution (b) had not been demanded in any area. The following statement shews the number of areas in which each resolution was either in force or precluded up to the 31st December, 1911:—

**QUEENSLAND.—NUMBER OF AREAS IN WHICH LOCAL OPTION RESOLUTIONS WERE IN FORCE OR PRECLUDED FROM ADOPTION, 31st DECEMBER, 1911.**

Particulars.	Resolution (a).	Resolution (b).	Resolution (c).	Total.
No. of areas in which resolutions in force ...	1	0	130	131
No. of areas in which resolutions precluded from being put in force ...	1	0	52	53
Total ...	2	0	182	184

The only resolution upon which a poll had been demanded within the metropolitan district (ten-miles radius) was resolution (c); this resolution is in force in thirty-six areas within the metropolitan district and has not been precluded in any area within that district.

5. **South Australia.**—In this State the subject of local option is now regulated by Part V. of the Licensing Act 1908. Acts which formerly dealt with the subject were the Licensed Victuallers Amendment Act 1891, the Licensed Victuallers Further Amendment Act 1896, and the Local Option Act 1905.

Under the Licensing Act of 1908 each electoral district for the House of Assembly is constituted a local option district, and each electoral district may be divided into local option districts by proclamation of the Governor. A quorum consisting of 500 electors, or one-tenth of the total number of electors, whichever be the smaller number, in any district may petition the Governor for a local option poll. The persons entitled to vote at the poll are those whose names appear on the electoral roll and who reside in the local option district. The option extends to (a) publicans' licenses, (b) wine licenses, (c) storekeepers' Australian wine licenses, (d) storekeepers' licenses, and (e) club licenses.

(i.) *Resolutions to be Submitted.* The following are the resolutions which are to be submitted, under the Act of 1908, at every poll:—(a) That the number of licenses be reduced. (b) That the number of licenses be not increased or reduced. (c) That the number of licenses be increased in the discretion of the Licensing Bench. One ballot paper to apply to all classes of licenses, and any one of the resolutions is carried by a majority of the valid votes recorded. If the votes recorded in favour of resolution

(a) do not constitute a majority, such votes are to be added to the votes in favour of resolution (b). If the sum of the votes recorded in favour of resolutions (a) and (b) do not constitute a majority, such votes are to be added to those recorded in favour of resolution (c).

(ii.) *Effects of Resolutions.* As to each class of license of which there are not less than three licenses current within the local option district at the date of the poll, the first resolution is to be taken to mean that the number of licenses so current be reduced by one-third; and as to each class of license of which there are less than three current, the first resolution is to be taken as equivalent to the second resolution.

The constitution of special Benches consisting of three members, appointed by the Governor, is provided for in order to give effect to the first resolution. A special Bench also deals with resolutions for the reduction of licenses adopted before the passing of the Act of 1908, but not then given effect to.

(iii.) *Resolutions Adopted.* Under the Acts prior to that of 1908 resolutions to reduce the number of licenses had been adopted in nine districts, in four of which, however, the polls were subsequently declared void. Special Benches were appointed in January, 1909, to deal with the determinations of electors in those districts in which the results of the polls were in favour of reducing the number of licenses, viz., in the districts of Port Adelaide, East Torrens, and Sturt. In accordance with the determinations of these Benches it was decided in February and March, 1909, that the following licenses, namely—thirty-five publicans', one wine, eleven storekeepers' colonial wine, and one storekeeper's—should not be renewed.

(iv.) *Local Option Polls.* On the 2nd April, 1910, local option polls were taken under the Act of 1908 in twenty-four districts; the electors in the remaining nine local option districts did not petition for polls. Resolution (a), that the number of licenses be reduced, was carried in only one district, Wallaroo; in the remaining 23 districts resolution (b), that the number of licenses be not increased or reduced, was carried. At the General Election of the House of Assembly held on the 10th February, 1912, no local option polls were held in any local option district.

**6. Western Australia.**—The law relating to local option in Western Australia is contained in Part V. (sections 75 to 86) of the Licensing Act 1911, which was assented to on 16th February, 1911, and came into force on the 7th April following. Prior to the passing of this Act there was no provision for any system of local option in Western Australia.

(i.) *Resolutions to be Submitted.* Under the above-mentioned Act, a vote of electors is to be taken in every district in or before April, 1911, and in every third year thereafter (1920 excepted). The resolutions to be submitted are:—(a) That the number of licenses existing in the district continue. (b) That the number of licenses existing in the district be increased. (c) That the number of licenses existing in the district be reduced. (d) That no licenses be granted or renewed in the district. If resolution (d) has been previously carried and is in force in the district the resolution submitted will be (e) That licenses be restored in the district. The resolutions (a), (c), and (d) are not to be submitted to the electors until after the 21st December, 1920. At the taking of every local option vote, the following questions will also be put before the electors:—(1) Do you vote that all new publicans' general licenses in the district shall be held by the State? and (2) Are you in favour of State management throughout the district? Resolutions (a), (b), and (c) are deemed to be carried if a majority in number of the votes given is in favour of any such resolution, provided that if resolution (b) has not been carried, the votes given in favour of that resolution shall, if resolution (a) has been submitted at the same time, be added to the votes given for resolution (a) and shall be deemed to have been given in favour of resolution (a). Resolution (d) is carried if three-fifths at least in number of the votes given are in favour of that resolution, provided

that where it has not been carried, the votes given for it shall be added to those given for resolution (c). Resolution (e) is carried if three-fifths at least in number of the votes given are in favour of it. It is also provided that resolution (d) or (e) shall not be carried unless thirty per cent. or more of the number of electors in the licensing district vote for such resolution.

(ii.) *Effect of Resolutions.* If resolution (a) is carried, or in the case of a local option taken before the end of the year 1920, if resolution (b) is negatived, the number of licenses shall not exceed the number at the time of taking the vote. If resolution (b) is carried, the Licensing Court may increase the number of licenses. If resolution (c) is carried, the number of licenses at the time of taking the vote shall be reduced and may be reduced to three-fourths of such number. If resolution (d) is carried, no licenses shall be granted, renewed or transferred. If resolution (e) is carried, licenses may be granted, renewed and transferred, but so that the number of licenses shall not be greater than the number held when the resolution (d) was carried in the district, and if it is not carried, the resolution (d) previously carried shall continue to have effect.

(iii.) *First Local Option Poll.* The first vote under the above provisions was taken on 26th April, 1911, the main question being confined (as prescribed by the Act when the vote is taken prior to 1920) to resolution (b) i.e., "that the number of licenses be increased," the only other questions submitted being those of State control of new publicans' general licenses and State management throughout all licensing districts.

The following table shows the result of this local option poll:—

**WESTERN AUSTRALIA.—RETURN SHEWING THE RESULT OF LOCAL OPTION  
POLL OF 26th APRIL, 1911.**

Result of Local Option Poll.		Do you vote that all new Publicans' General Licenses be held by the State.		Are you in favor of State Management throughout all Licensing Districts.	
Votes given in favor of the number of Licenses in the various districts being increased.	Votes given in favor of the number of Licenses in the various districts not being increased.	Yes.	No.	Yes.	No.
4,554	17,623	27,007	14,387	26,631	14,944

7. *Tasmania.*—In this State the subject of local option is dealt with in Part VI. (sections 72 to 84) of the Licensing Act 1902, as subsequently amended by section 8 of the Licensing Act 1908, which later Act, however, does not come into full operation until the first of January, 1917. Other Acts which formerly dealt with the subject, but now repealed, are the Licensing Acts 1889 and 1890, the Inn Keepers Relief Act 1894, and the Licensing Act Amendment Act 1898. Under the Act of 1902, opposition to the grant of a license may be made (i.) by any resident ratepayer, (ii.) by petition of rate-payers resident in the neighbourhood, or (iii.) by local option poll.

(i.) *Opposition by Resident Ratepayer.* Any ratepayer resident in the district in which a house in respect of which an application for an hotel or publichouse certificate is intended to be made is situated, may, by giving five days' notice to the Clerk of Petty Sessions, oppose the grant of the certificate before the Licensing Bench. The objections which may be taken to the granting of a certificate for an hotel or publichouse license are as follows:—(a) That the applicant is of bad character; (b) that he has been convicted of certain specified offences; and (c) that the house in respect of which the application is made does not comply with the requirements of the Act. The objections which may be taken to the granting of a provisional certificate for an hotel license are:—(a) That the house does not comply with the requirements of the Act, and (b) that an hotel is not required in the neighbourhood.

(ii.) *Petition of Resident Ratepayers.* The ratepayers resident in the neighbourhood of a house in respect of which an application for a license is made may petition the Licensing Bench against the granting of such license. The neighbourhood referred to is defined as meaning a space within a radius of 200 yards from the front door of the house if within a city, within a radius of 800 yards if within a town, and within a radius of two miles if the house is not situate within a city or town. If the petition is directed against the granting of a provisional certificate, and is signed by a majority of the resident ratepayers, the bench must refuse to grant the certificate.

(iii.) *Local Option Poll.* Any number of ratepayers, not less than seven, resident in the neighbourhood of the house in respect of which a provisional certificate for an hotel license has been applied for, may require, by petition lodged with the Clerk of Petty Sessions, that a poll of the ratepayers resident in the neighbourhood be taken upon the question whether such provisional certificate be granted or not. If a majority of the votes taken be against the granting of the certificate the Licensing Bench must refuse to grant it.

Particulars as to operations under Part VI. of the Act are not available.

## 5. Preferential Voting.

1. **Introduction.**—The methods of election adopted in the early stages of representative institutions are now in many cases considered to fail to respond to the needs of the more complex political conditions of highly civilised communities, and it would appear that the movements which have taken place in favour of improved electoral methods are in keeping with the advances made in practically all other human institutions. The original system of exclusive majority representation has often resulted in an exaggeration of the majority, sometimes in the total suppression of the minority, and on other occasions in the return of a majority of representatives by a minority of the electors.\* To remedy these evils various schemes of preferential voting have been devised, on the basis that one of the essentials of the realisation of true self-government is that every responsible section of the community shall be able to give expression through its own representatives to its needs and desires in the assembly which is representative of the community, and which derives its authority from the fact that it is so representative. The systems of preferential voting which are in force in certain of the States of the Commonwealth are briefly described in this sub-section.†

2. **Systems in Force.**—Systems of preferential voting are now in force in the States of Victoria, Queensland, Western Australia, and Tasmania.

Preferential voting is not, however, a part of the electoral system of the Commonwealth, nor is it in operation in New South Wales or South Australia. In the former State the Electoral Act 1910, however, provides that if, as the result of the first ballot for the election of Members of the Legislative Assembly, it is found that no candidate has received an absolute majority of votes, a second ballot shall be taken between the candidate who has received the highest number of votes, and the candidate who has received the next highest number of votes, and requires the Returning Officer to decide the precedence of candidates for the purposes of the second ballot where the voting is equal by giving such casting vote or votes as may be necessary for this purpose, and to give a casting vote if, as the result of the second ballot, the candidates receive an equal number of votes.

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\* See "Proportional Representation," by J. H. Humphreys. Methuen & Co., London, 1911.

† Information supplied by C. Oldham, Esq., Commonwealth Chief Electoral Officer.



3. **Victoria.**—A system of preferential voting was brought into operation for the first time in this State under the provisions of the Preferential Voting Act 1911, on the occasion of the general elections for the Legislative Assembly. The law requires the elector to mark his vote by placing the numeral 1 on the ballot-paper opposite the name of the candidate for whom he votes as his first preference, and where there are more than two candidates, to then give contingent votes for all the remaining candidates by placing numerals 2, 3, 4, and so on as the case requires, opposite their names, so as to indicate, by such numerical sequence, the order of his preference. At the scrutiny, the number of first preference votes given at the election for each candidate is ascertained, and the candidate who has the greatest number of such first preference votes (if such number constitutes an absolute majority of votes) is declared elected.

A ballot-paper is treated as informal if it does not indicate the elector's first preference for one candidate, and, in the case of any election where there are more than two candidates, the contingent votes for all the remaining candidates.

If no candidate has an absolute majority of votes, the Returning Officer declares the candidate who has obtained the fewest first preference votes to be a defeated candidate, and, thereupon, opens all the parcels containing ballot-papers used at the election, and arranges such ballot-papers by placing, in separate parcels, all those on which a first preference is indicated for the same candidate and the full contingent votes are also given for all the remaining candidates, omitting ballot-papers which require to be rejected; and the ballot-papers counted to the defeated candidate are then distributed among the non-defeated candidates next in order of the voter's preference. After such distribution, the number of votes given to each non-defeated candidate is again ascertained. If no candidate then has an absolute majority of votes, the process of declaring the candidate who has the fewest votes to be defeated, and distributing his ballot-papers among the non-defeated candidates next in order of the voter's preference, is repeated, and the votes recounted after every such redistribution until one candidate has obtained an absolute majority of votes, and is declared elected.

If on any count, two or more candidates have an equal number of votes, and one of them has to be declared defeated, the Returning Officer is required to decide which is to be declared defeated, and, if on the final count, each candidate has an equal number of votes, the Returning Officer is further required to give a casting vote, and so decide the election.

4. **Queensland.**—A modified system of optional preferential voting for the Legislative Assembly is in operation in Queensland, under the provisions of Section 78A to 78 J inclusive of "The State Elections Act 1885 to 1908."

The elector is required to strike out from his ballot-paper the names of the candidates for whom he does not intend to vote, and then may, if he thinks fit, indicate on his ballot-paper the name or names of any candidates for whom he does not vote in the first instance, but for whom he desires his vote or votes to be counted in the event of any candidate or candidates for whom he votes in the first instance not receiving an absolute majority of votes, and if he indicates more than one such candidate, may indicate the order in which he desires that his vote or votes shall be counted for any such candidate or candidates. Such indication must be made by writing the figures 2, 3 or any subsequent number opposite to the name or names of the candidate or candidates for whom he does not vote in the first instance, but for whom he desires his vote or votes to be so counted, and the order indicated by such numbers is taken to be the order in which he desires his vote or votes to be so counted.

When one member only is to be returned at the election, if there is no candidate who receives an absolute majority of votes, all the candidates except those two who receive the greatest number of votes are declared to be defeated candidates. The vote of

every elector who has voted for a defeated candidate is counted for that one (if any) of the remaining two candidates for whom he has indicated that he desires his vote to be counted. The vote so counted for such remaining candidates is added to the votes originally given for them, and the candidate who receives the greatest number of votes, including the votes so counted (if any), is declared elected.

When two members are to be returned, and there are not more than four candidates, the two candidates who receive the greatest number of votes are declared elected. When two members are to be returned, and there are more than four candidates, if there is no candidate who receives an absolute majority of votes, all the candidates except those four who receive the greatest number of votes are deemed defeated candidates.

The vote or votes of every elector who has voted for a defeated candidate or defeated candidates must be counted for that one or those two of the remaining four candidates for whom the elector has not voted in the first instance, but for whom he has indicated in the required manner that he desires his vote or votes to be counted. The votes so counted for such remaining candidates are added to the votes originally given for them, and the candidates who receive the greatest number of votes, including the votes so counted (if any), are declared elected.

If only one candidate receives an absolute majority of votes, he is declared elected, and in that case all the other candidates except those two who receive the next greatest number of votes are deemed defeated candidates. The vote of every elector who has voted for a defeated candidate is counted for that one (if any) of the remaining two candidates for whom the elector has not voted in the first instance, but for whom he has indicated in the required manner that he desires his vote to be counted. The votes so counted for such remaining candidates are added to the votes originally given for them, and the candidate who receives the greatest number of votes, including the votes so counted (if any), is declared elected.

When two or more candidates, neither of whom is elected, receive an equal number of votes, the Returning Officer decides by his casting vote which of them have or has the greatest number of votes. If an elector writes a figure opposite to the name of a candidate for whom he votes in the first instance, the ballot-paper is not rejected for that reason only.

The foregoing provisions for securing the absolute majority of votes do not apply to any election at which more than two members are to be elected for one Electoral District.

**5. Western Australia.**—Preferential voting was made compulsory in this State (where it had previously been optional) under the Amending Electoral Act of 1911.

The elector is required to mark his ballot-paper by placing the numeral 1 opposite the name of the candidate for whom he votes as his first preference, and if there are more than two candidates, to give contingent votes for all the remaining candidates by placing the numerals 2, 3 and so on (as the case requires) opposite their names, so as to indicate by such numerical sequence the order of his preference. At the scrutiny a ballot-paper is rejected as informal if, when there are more than two candidates, it is not marked so as to indicate by numerical sequence the voter's preference as regards *all the candidates*, subject to the proviso that if numerals in arithmetical sequence are placed opposite the names of all the candidates but one, the next following numeral is deemed to be placed opposite the name of the remaining candidate. A special provision also avoids the rejection of a ballot-paper by reason of the fact that the elector has indicated his vote or first preference by means of a cross instead of the numeral 1.

The candidate who receives the largest number of first preference votes is declared elected if such number constitutes an absolute majority of votes; but if no candidate has an absolute majority of votes, the Returning Officer declares the candidate who has obtained the fewest first preference votes to be a defeated candidate; and each ballot-paper counted to him is then (unless exhausted) distributed among the non-defeated candidates next in order of the elector's preference. When a

candidate is declared defeated, any ballot-paper counted to him is deemed to be exhausted if there is not indicated upon it a consecutive preference for a candidate not declared defeated. After such distribution the number of votes given to each non-defeated candidate is again ascertained, and if no candidate then has an absolute majority of votes, the process of declaring the candidate who has the fewest votes to be defeated and distributing each of his ballot-papers (unless exhausted) amongst the non-defeated candidates next in order of the voter's preference is repeated, and the votes recounted after every such distribution, until one candidate has obtained an absolute majority of votes, when such candidate is declared duly elected. When only two candidates remain undefeated, and neither has obtained an absolute majority, the candidate who has obtained the largest number of votes is declared to be elected. Every ballot-paper not rejected as informal is counted in every count until it becomes exhausted, when it is rejected in all further counts.

If on any count two or more candidates have an equal number of votes, and one of them has to be declared defeated, the Returning Officer is required to decide which is to be declared defeated, and is required to give a casting vote in the event of an equality of votes on the final count; but otherwise he may not vote at the election.

**6. Tasmania.**—The State of Tasmania is distributed into five electorates for the purposes of House of Assembly Elections, and each electorate returns six members, who are elected under a system of proportional representation. In a general election the elector is required to mark his ballot-paper by placing within, or substantially within, the squares respectively opposite the names of three candidates the numbers 1, 2 and 3, so as to indicate the order of his preference. He may, in addition, indicate the order of his preference for as many more candidates as he pleases, by placing within, or substantially within, the squares respectively opposite their names, other numbers next in numerical order after those already used by him.

The rules under which the scrutiny of the ballot-papers is conducted require that—

(A) The number of first choices recorded for each candidate shall be counted, and all informal voting-papers shall be rejected.

(B) The aggregate number of such first choices shall be divided by one more than the number of candidates required to be elected, and the quotient increased by one, disregarding any remainder, shall be the quota, and (except as hereinafter provided in Rule J) no candidate shall be elected until he obtains a number of votes equal to or greater than the quota.

(C) Any candidate who has, upon the first choices being counted, a number of such votes equal to or greater than the quota shall be declared elected.

(D) Where the number of such votes obtained by any candidate is equal to the quota, the whole of the voting-papers on which a first choice is recorded for such elected candidate shall be set aside as finally dealt with.

(E) Where the number of such votes obtained by any candidate is in excess of the quota, the proportion of votes in excess of the quota shall be transferred to the other candidates not yet declared elected, next in the order of the voter's respective preferences, in the following manner:—

(i.) All the voting-papers on which a first choice is recorded for the elected candidate shall be re-examined, and the number of second choices, or (in the case provided for in Rule L) third or next consecutive choices, recorded for each unelected candidate thereon shall be counted.

(ii.) The surplus of the elected candidate shall be divided by the total number of votes obtained by him on the counting of the first choices, and the resulting fraction shall be the transfer value.

(iii.) The number of second or other choices, ascertained in paragraph (i.) to be recorded for each unelected candidate, shall be multiplied by the transfer value.

(iv.) The resulting number, disregarding any fractional remainder, shall be credited to each unelected candidate, and added to the number of votes obtained by him on the counting of the first choices.

(F)—(a) Where, on the counting of the first choices or on any transfer, more than one candidate has a surplus, the largest surplus shall be first dealt with. If then more than one candidate has a surplus, the then largest surplus next in order of magnitude shall be dealt with, and so on. Provided that, if one candidate has obtained a surplus at a count or transfer previous to that at which another candidate obtains a surplus, the surplus of the former shall be first dealt with.

(b) Where two or more surpluses are equal, the surplus of the candidate who has the highest on the poll at the count or transfer at which they last had an unequal number of votes shall be first dealt with, and if they have had an equal number of votes at all preceding counts or transfers, the Returning Officer shall decide which candidate's surplus shall be first dealt with.

(G)—(a) Where the number of votes obtained by a candidate is raised up to or above the quota by a transfer as aforesaid, he shall thereupon be declared elected. And in such case, notwithstanding the fact that he may have reached the quota, such transfer shall be completed, and all the votes to which he is entitled therefrom shall be transferred to him, but no votes of any other candidate shall be transferred to him.

(b) Where the number of votes obtained by a candidate is raised up to, but not above the quota by a transfer as aforesaid, the whole of the voting-papers on which such votes are recorded shall be set aside as finally dealt with.

(c) Where the number of votes obtained by a candidate is raised above the quota by a transfer as aforesaid, his surplus shall be transferred to the candidates next in the order of the voter's respective preferences, in the following manner:—

(i.) The voting-papers on which are recorded the votes obtained by the elected candidate in the last transfer shall be re-examined, and the number of third, or (in the case provided for in Rule L) next consecutive choices recorded for each unelected candidate thereon counted.

(ii.) The surplus of the elected candidate shall be divided by the total number of voting-papers mentioned in paragraph (i.), and the resulting fraction shall be the transfer value.

(iii.) The number of second (or other) choices, ascertained in paragraph (i.) to be recorded for each unelected candidate, shall be multiplied by the last-mentioned transfer value.

(iv.) The resulting number, disregarding any fractional remainder, shall be credited to each unelected candidate, and added to the number of votes previously obtained by him.

(H)—(a) Where, after the first choices have been counted and all surpluses (if any) have been transferred as hereinbefore directed, no candidate, or less than the number of candidates required to be elected, has or have obtained the quota, the candidate who is lowest on the poll shall be excluded, and all the votes obtained by him shall be transferred to the candidates next in the order of the voter's respective preferences, in the same manner as is directed in Rule E.

(b) The votes obtained by such excluded candidate as first choices shall first be transferred, the transfer value of the vote in each case being 1.

(c) The other votes of such excluded candidate shall then be dealt with in the order of the transfers in which, and at the transfer value at which, he obtained them.

(d) Each of the transfers which takes place under the two previous clauses of this rule shall be deemed for all purposes to be a separate transfer.

(I)—(a) Where the number of votes obtained by a candidate is raised up to or above the quota by any such transfer as aforesaid, he shall thereupon be declared elected. And in such case notwithstanding the fact that he may have reached the quota, such transfer shall be completed, and all the votes to which he is entitled therefrom shall be transferred to him, but no other votes shall be transferred to him.

(b) Where the number of votes obtained by a candidate is raised up to, but not above, the quota by any such transfer as aforesaid, the whole of the voting-papers on which such votes are recorded shall be set aside as finally dealt with.

(c) Where the number of votes obtained by a candidate is raised above the quota by any such transfer as aforesaid, his surplus shall be transferred to the candidates next in the order of the voter's respective preferences in the same manner as is directed in Rule G, Clause (c). Provided that such surplus shall not be dealt with until all the votes of the excluded candidate have been transferred.

(d) Where any surplus exists it shall be dealt with before any other candidate is excluded.

(j) The same process of excluding the candidate lowest on the poll, and transferring to other candidates his votes shall be repeated until all the candidates, except the number required to be elected, have been excluded, and the unexcluded candidates, who have not already been so declared, shall then be declared elected.

(K) Where at any time it becomes necessary to exclude a candidate, and two or more candidates have the same number of votes and are lowest on the poll, then whichever of such candidates was lowest on the poll at the last count or transfer at which they had an unequal number of votes shall be first excluded, and if such candidates have had an equal number of votes at all preceding counts or transfers the Returning Officer shall decide which candidate shall be first excluded.

(L) In determining what candidate is next in the order of the voter's preference, any candidates who have been declared elected or who have been excluded shall not be considered, and the order of the voter's preference shall be determined as if the names of such candidates had not been on the voting-paper.

(M) Where on any transfer it is found that on any voting-paper there is no candidate opposite whose name a number is placed, other than those who have been already either declared elected or excluded, such voting-papers shall be set aside as exhausted.

Where in the case of a by-election one candidate only is to be elected and no candidate on the first count secures an absolute majority of the whole of the formal votes recorded at the election, the candidate who has the fewest votes is excluded (i.e., regarded as defeated) and each ballot-paper counted to him is (unless exhausted) counted to the unexcluded candidate next in the order of the voter's preference.

If no candidate then has an absolute majority of votes, the process of excluding the candidate who has the fewest votes and counting each of his ballot-papers (unless exhausted) to the unexcluded candidate next in the order of the voter's preference is repeated until one candidate has an absolute majority of votes.

Every ballot-paper not rejected as informal is to be counted in every count until it becomes exhausted, when it is rejected in all further counts. Where a candidate is excluded, any ballot-paper counted to him is deemed to be exhausted if there is not indicated upon it a consecutive preference for one unexcluded candidate.

If on any count two or more candidates have an equal number of votes and any one of them has to be excluded, the Returning Officer decides which shall be excluded, and if in the final count two candidates have an equal number of votes, the Returning Officer decides by his vote which shall be elected, but otherwise the Returning Officer has no vote at the election.

A comprehensive report on the General Election for the House of Assembly held on the 30th April, 1909, furnished to the Government by Messrs. Douglas, Piesse, and Birchall (officers connected with the Administration), gives full details of the working of the proportional representation system in Tasmania, and may be studied with advantage by persons interested.

## § 6. Valuation of Commonwealth Production.

The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in connection with the value of production from the agricultural and pastoral industries, which, it is believed, in the main give fairly accurate results. In the case of manufactories, five of the States in 1908 collected statistics of the value of production, while for the sixth State, Tasmania, an estimate has been prepared which it is believed gives a fair approximation. While the difficulties in the way of obtaining adequate valuations for all classes of production are serious enough at the present time they are still more pronounced in seeking to obtain information as to values for earlier years, when the returns were far more incomplete. It must be clearly understood, therefore, that the values given in the succeeding table are, in general, approximations only. With the adoption of the forms and methods of tabulation agreed upon at the Statisticians' Conference of 1906 it is hoped, however, that at no distant date fairly complete valuations will be available for all industries, and the returns collected in 1909 and 1910 certainly shew a considerable improvement over those of previous years. In the meantime the figures quoted must be taken with all their limitations. The table hereunder shews the approximate value of the production from all industries during the years 1906 to 1910:—

### ESTIMATED VALUE OF PRODUCTION FROM INDUSTRIES, 1906 to 1910.

Year.	Agriculture.	Pastoral.	Dairy, Poultry, & Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.*	Total.
	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.
1906 ...	25,349	45,389	13,611	4,879	26,622	†	†
1907 ...	30,500	50,660	15,584	4,826	28,301	†	†
1908 ...	37,150	47,259	15,045	4,286	24,580	36,637	164,957
1909 ...	41,056	50,864	15,064	4,462	23,039	40,018	174,503
1910 ...	39,752	56,993	17,387	4,789	23,215	45,598	187,734

\* These amounts differ from those given in Section XIII., Manufacturing Industries, owing to certain products which are there included having been included in Dairy Farming and Forestry in this table. † Full particulars not available.

The total production from all industries during 1910 was £187,734,000, equal to an average of £42 19s. 2d. per inhabitant.

In the next table will be found the value of production in each State at decennial intervals since 1871, and for the year 1909. Details for individual States are not available for the year 1910, owing to discontinuance by Customs Department of collection of

statistics of Inter-State trade. The figures for the Census years have been taken from "Australia and New Zealand," and, in view of what has been said in a previous paragraph, must be regarded as very rough estimates only:—

### ESTIMATED VALUE OF PRODUCTION, 1871 to 1909.

State.	1871.	1881.	1891.	1901.	1909.	Develop- ment* since 1871.
	£1000.	£1000.	£1000.	£1000.	£1000.	
New South Wales ...	15,379	25,180	36,740	38,954	65,591	4.3
Victoria ...	19,260	22,750	30,320	30,807	42,545	2.2
Queensland ...	3,995	10,200	14,274	16,933	26,565	6.6
South Australia ...	5,228	8,457	9,026	10,314	16,468	3.1
Western Australia ...	707	943	1,806	12,544	16,325	23.1
Tasmania ...	2,131	3,586	3,921	5,033	7,009	3.3
Commonwealth ...	46,700	71,116	96,087	114,585	174,503	3.7
Average per head ...	£ s. d. 27 17 2	£ s. d. 31 1 3	£ s. d. 29 19 9	£ s. d. 30 2 6	£ s. d. 40 16 6	1.5

\* Ratio of value of production for 1909 to that for 1871.

## § 7. Norfolk Island.

1. **Area, Location, etc.**—Norfolk Island, discovered by Captain Cook in 1774, is situated in latitude 29° 3' 45" south, longitude 167° 58' 6" east. Its total area is 8528 acres, the island being about 5 miles long and 3 miles wide. From Sydney it is distant 930 miles, and from New Zealand 400 miles. The coast line is 20 miles; and its form that of an irregular ellipse. Except on the south-west, inaccessible cliffs rise from the water's edge. Cocoanuts flourish, and native pine trees attain a magnificent size. The climate is equable, and the average annual rainfall 43 inches.

2. **Settlement.**—The first colonisation, in 1788, was by Lieutenant King, who in H.M.S. *Sirius* established a small penal station as a branch settlement of that at Port Jackson. The settlement was abandoned in 1806, and thence for 20 years its chief use was as a whaling station and place of call for British warships.

From 1826 to 1855 it was again made a penal station. In 1844 it was annexed to Van Diemen's Land (Tasmania).

The descendants of the *Bounty* mutineers having become too numerous to subsist on Pitcairn Island were removed thence to Norfolk Island in 1856. The new community numbered 193, 94 males and 99 females, and were the descendants of British sailors and Tahitian women.

In 1856 the island was severed from Tasmania, and created a distinct and separate settlement under the jurisdiction of New South Wales. In 1897 it was made a dependency under the Governor of that Colony, and is now administered by the Chief Secretary's Department through a resident Chief Magistrate, in whom is vested the executive government of the settlement, and the penal supervision of its affairs.

3. **Population.**—The census population (3rd April, 1911) was 568 males, 417 females, total 985.

4. **Production, Trade, etc.**—In 1910 the imports from the Commonwealth were valued at £6294, the exports at £749. The chief articles sent to the Commonwealth were skins, £220; cocoanut oil, £265. There is little other production. A monthly

steam service is maintained with Sydney; other communication is irregular. The "all red" cable from Great Britain *via* Vancouver, Fanning Island and Fiji, bifurcates at Norfolk, one line connecting with New Zealand, the other with Brisbane.

5. **Social Condition.**—Education is free and compulsory, and there is a public school under the State Department of Public Instruction, and with standards corresponding to the State public schools.

The magistrate's court has criminal jurisdiction in all crimes except capital offences, civil jurisdiction in all matters, and authority to grant probate and letters of administration.

Dealings with Crown lands are in the hands of the Governor alone.

## § 8. Lord Howe Island.

1. **Area, Location, etc.**—Between Norfolk Island and the Australian coast is Lord Howe Island in latitude 31° 30' south; longitude 159° 5' east. It was discovered in 1788. The total area is 3220 acres, the island being seven miles in length and from one half to one and three-quarter miles in width. It is distant 436 miles from Sydney. The flora is varied and the vegetation luxuriant, with shady forests, principally of palms and banyans. The highest point is Mount Garner, 2840 feet. The climate is mild and the rainfall abundant.

2. **Settlement.**—The first settlement was by a small Maori party in 1833; afterwards a colony was settled from Sydney. Constitutionally it is a dependency of New South Wales, and is supervised by a visiting magistrate.

3. **Population.**—The estimated population on 31st December, 1910, was 56 males, 49 females, total 105.

4. **Production, Trade, etc.**—The principal product is the seed of the native palms. A monthly steamship service is maintained with Sydney. The lands belong to the Crown. The occupants pay no rent, and are tenants on sufferance.



## APPENDIX.

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Recent information and returns which have come to hand since the various sections of this book were sent to press, are given in the pages immediately following.

## SECTION IV. POPULATION.

### § 1. Census of 3rd April, 1911, p. 116.

A summary of the Census results available at the date of writing Section IV. has been included in that section. Further results available at the date of going to press are given hereunder :—

#### 1.—MALE POPULATION OF STATES AND TERRITORIES OF COMMONWEALTH

At Census of 3rd April, 1911, classified according to Age. (Exclusive of Full-blooded Aborigines).

Age last Birthday.	States.						Territories.		C'with.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap.Ter.	
0	22,939	15,869	8,329	5,359	3,808	2,761	19	18	59,102
1	20,839	14,819	7,837	4,994	3,525	2,501	18	18	54,551
2	19,536	14,120	7,134	4,805	3,487	2,455	18	13	51,568
3	19,476	14,328	7,290	4,557	3,529	2,490	15	18	51,703
4	19,213	13,925	7,134	4,394	3,360	2,429	14	18	50,487
0-4	102,003	73,061	37,724	24,109	17,709	12,636	84	85	267,411
5	18,522	13,607	6,527	4,339	3,254	2,425	22	12	48,708
6	17,858	13,460	5,753	4,225	3,078	2,384	17	21	47,796
7	16,375	12,736	6,108	4,034	2,971	2,183	20	20	44,447
8	16,258	12,966	6,397	4,006	2,813	2,181	21	11	44,653
9	16,124	12,846	6,283	3,866	2,691	2,134	13	25	43,982
5-9	85,137	65,615	32,068	20,470	14,807	11,307	93	89	229,586
10	16,434	13,189	6,439	3,976	2,690	2,160	16	13	44,917
11	16,343	13,133	6,552	4,032	2,564	2,002	15	15	44,656
12	14,830	11,812	6,031	3,737	2,319	1,912	14	23	40,678
13	15,683	12,465	6,298	3,799	2,121	1,975	7	21	42,369
14	15,846	12,987	6,134	4,045	2,095	2,037	13	27	43,184
10-14	79,136	63,586	31,454	19,589	11,789	10,086	65	99	215,804
15	15,982	13,081	6,381	4,127	2,209	1,887	17	13	43,697
16	16,127	13,581	6,315	4,361	2,150	2,041	10	15	44,600
17	16,872	13,656	6,545	4,269	2,400	1,981	18	24	45,765
18	17,237	14,114	6,806	4,400	2,563	2,121	17	27	47,285
19	16,763	13,372	6,601	4,367	2,465	1,883	17	16	45,484
15-19	82,981	67,804	32,648	21,524	11,787	9,913	79	95	226,831
20	17,570	13,419	6,884	4,337	2,746	1,831	28	24	46,839
Under 21	366,827	283,485	140,778	90,029	58,838	45,773	349	392	986,471
21-24	69,744	48,476	26,716	17,227	11,967	7,012	118	80	181,340
25-29	76,430	51,955	29,053	19,020	15,487	7,731	156	90	199,922
30-34	64,228	44,928	24,445	15,057	15,641	6,570	175	75	171,119
35-39	55,121	41,308	21,411	12,287	15,551	5,911	213	70	151,872
40-44	50,940	42,512	20,086	11,468	13,923	5,555	340	43	144,867
45-49	46,638	41,015	18,769	10,300	10,758	5,157	384	58	133,079
50-54	39,345	31,866	15,202	9,543	7,345	4,368	415	48	108,132
55-59	27,544	19,486	10,271	7,253	4,199	3,019	238	48	72,058
60-64	20,023	13,834	7,474	4,971	2,788	2,115	184	27	51,416
65-69	15,370	11,432	5,889	4,006	1,869	1,581	54	26	40,227
70-74	10,611	9,415	4,260	2,555	1,124	1,041	39	18	29,063
75-79	6,658	7,275	2,103	1,529	576	678	7	5	18,831
80-84	2,719	3,903	768	818	254	341	2	3	8,808
85-89	771	1,133	236	289	64	144	...	1	2,638
90-94	185	267	52	68	25	43	...	...	640
95-99	35	34	9	19	3	16	...	...	116
100 & upwards	19	8	2	1	1	4	...	...	35
21 & upwards	486,381	368,847	186,746	116,411	101,575	51,286	2,325	592	1,314,163
Unspecified	4,490	3,259	1,982	918	1,152	532	60	8	12,401
Total	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

## 2.—FEMALE POPULATION OF STATES AND TERRITORIES OF COMMONWEALTH

At the Census of 3rd April, 1911, classified according to Age.

(Exclusive of Full-blooded Aborigines.)

Age last Birthday.	States.						Territories.		C'with.
	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	Fed. Cap. Ter.	
0	22,115	15,089	7,967	5,114	3,684	2,584	10	21	56,584
1	20,035	14,329	7,445	4,791	3,541	2,489	19	21	52,670
2	19,223	13,316	6,859	4,580	3,452	2,420	12	16	49,878
3	19,202	14,020	6,911	4,527	3,370	2,314	21	23	50,388
4	18,288	13,663	6,798	4,409	3,168	2,337	25	14	48,702
0-4	98,863	70,417	35,980	23,421	17,215	12,144	87	95	258,222
5	17,991	13,352	6,383	4,215	3,142	2,180	14	27	47,304
6	17,472	12,954	6,565	4,124	3,052	2,191	16	14	46,388
7	15,883	12,505	6,117	3,861	2,906	2,191	24	17	43,504
8	16,192	12,754	6,141	3,930	2,744	2,143	14	14	43,932
9	15,582	12,339	6,212	3,720	2,543	2,097	20	19	42,532
5-9	83,120	63,904	31,418	19,850	14,387	10,802	88	91	223,660
10	16,254	12,897	6,306	3,975	2,647	2,020	15	25	44,139
11	15,936	13,009	6,545	4,024	2,508	2,017	10	13	44,152
12	15,328	11,916	5,935	3,668	2,286	1,775	15	17	40,940
13	15,083	12,136	6,104	3,732	2,043	1,901	13	14	41,026
14	15,397	12,565	6,105	4,013	2,053	1,940	7	20	42,100
10-14	77,998	62,523	30,995	19,412	11,627	9,653	60	89	212,357
15	15,893	13,213	6,235	4,110	2,023	1,028	12	24	43,438
16	15,963	13,359	6,135	4,231	2,142	1,933	13	18	43,794
17	16,313	13,604	6,274	4,301	2,227	1,970	13	22	44,724
18	16,708	13,917	6,258	4,310	2,224	2,018	19	13	45,467
19	16,138	13,626	5,986	4,398	2,190	1,916	13	15	44,282
15-19	81,015	67,719	30,888	21,350	10,806	9,765	70	92	221,705
20	16,935	13,845	6,272	4,255	2,168	1,986	13	14	45,488
Under 21	357,031	278,408	135,553	88,288	56,203	44,350	318	381	961,432
21-24	65,915	51,372	23,135	16,381	8,416	7,307	32	45	172,603
25-29	72,390	55,651	23,508	18,517	10,429	7,872	46	41	188,454
30-34	59,896	48,694	19,289	14,707	10,582	6,579	50	44	159,841
35-39	50,708	44,549	16,738	12,213	9,917	5,361	35	39	139,560
40-44	43,455	42,480	14,607	11,204	7,924	4,869	38	44	124,651
45-49	37,583	38,477	12,246	10,042	7,648	4,488	24	29	108,537
50-54	29,964	29,420	9,519	8,348	3,745	3,755	11	25	84,787
55-59	20,905	18,457	6,356	6,190	2,427	2,558	9	21	56,923
60-64	16,352	14,316	4,918	4,626	1,818	1,928	3	13	43,974
65-69	13,014	12,603	4,160	3,734	1,320	1,614	4	15	36,464
70-74	8,585	9,072	2,792	2,717	813	1,119	1	8	26,007
75-79	5,242	6,034	1,411	1,615	376	719	1	3	16,501
80-84	2,223	3,387	596	971	189	369	...	4	7,689
85-89	783	1,129	232	373	59	128	...	2	2,706
90-94	241	265	50	99	10	37	...	...	702
95-99	34	56	10	19	1	7	...	...	127
100 & upwards	12	10	3	2	2	...	...	...	29
21 & upwards	427,302	377,772	139,570	111,958	63,626	48,740	254	333	1,169,555
Unspecified	3,803	3,780	1,184	954	720	530	4	8	10,983
Total	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

## 3.—TOTAL POPULATION OF STATES AND TERRITORIES OF COMMONWEALTH

At the Census of 3rd April, 1911, classified according to Age.

(Exclusive of Full-blooded Aborigines.)

Age last Birthday.	States.						Territories.		C'wlth.
	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter	
0	45,054	30,958	16,296	10,473	7,492	5,345	29	39	115,686
1	40,874	29,148	15,282	9,785	7,066	4,990	37	39	107,221
2	38,759	27,436	13,993	9,385	6,939	4,875	30	29	101,446
3	38,678	28,348	14,201	9,084	6,899	4,804	36	41	102,091
4	37,501	27,588	13,932	8,803	6,528	4,766	39	32	99,189
0-4	200,866	143,478	73,704	47,530	34,924	24,780	171	180	525,633
5	36,513	26,959	12,910	8,554	6,396	4,605	36	39	96,012
6	35,390	26,414	13,318	8,349	6,130	4,575	33	35	94,184
7	32,258	25,241	12,225	7,895	5,877	4,374	44	37	87,951
8	32,450	25,720	12,538	7,936	5,557	4,324	35	25	88,585
	31,706	25,185	12,495	7,586	5,234	4,231	33	44	86,514
5-9	168,257	129,519	63,486	40,320	29,194	22,109	181	180	453,246
10	32,688	26,086	12,745	7,951	5,337	4,180	31	38	89,056
11	32,279	26,142	13,097	8,056	5,162	4,019	25	28	88,808
12	30,158	23,728	11,966	7,405	4,605	3,687	29	40	81,618
13	30,766	24,601	12,402	7,531	4,164	3,876	20	35	83,395
14	31,243	25,552	12,239	8,058	4,148	3,977	20	47	85,284
10-14	157,134	126,109	62,449	39,001	23,416	19,739	125	188	428,161
15	31,875	26,294	12,616	8,237	4,232	3,815	29	37	87,135
16	32,090	26,940	12,450	8,592	4,292	3,974	23	33	88,394
17	33,185	27,260	12,819	8,570	4,627	3,951	31	46	90,489
18	33,945	28,031	13,064	8,710	4,787	4,139	36	40	92,752
19	32,901	26,998	12,587	8,765	4,655	3,799	30	31	89,766
15-19	163,996	135,523	63,536	42,874	22,593	19,678	149	187	448,536
20	34,505	27,264	13,156	8,592	4,914	3,817	41	38	92,327
Under 21	724,758	561,893	276,331	178,317	115,041	90,123	667	773	1,947,903
21-24	135,659	99,848	49,851	33,608	20,383	14,319	150	125	353,943
25-29	148,820	107,606	52,561	37,537	25,916	15,603	202	131	388,376
30-34	124,124	93,622	43,734	29,764	26,223	13,149	225	119	330,960
35-39	105,829	85,857	38,149	24,500	25,463	11,272	248	109	291,432
40-44	94,395	84,992	34,693	22,672	21,847	10,454	378	87	269,518
45-49	84,221	79,492	31,015	20,342	16,406	9,645	408	87	241,616
50-54	69,309	61,286	24,721	17,891	11,090	8,123	426	73	192,919
55-59	48,449	37,943	16,627	13,443	6,826	5,577	247	69	128,961
60-64	36,375	28,150	12,392	9,597	4,606	4,043	187	40	95,390
65-69	28,384	24,035	10,049	7,740	3,189	3,195	58	41	76,691
70-74	19,196	19,387	7,052	5,272	1,937	2,160	40	26	55,070
75-79	11,900	14,209	5,514	3,344	952	1,397	8	7	35,332
80-84	4,942	7,230	1,364	1,789	393	710	2	8	16,497
85-89	1,554	2,262	468	662	123	272	...	3	5,344
90-94	426	532	102	167	35	80	...	...	1,342
95-99	69	90	19	38	4	23	...	...	243
100 & upwards	31	18	5	3	3	4	...	...	64
21 & upwards	913,683	746,619	326,316	228,369	165,201	100,026	2,579	925	2,483,718
Unspecified	8,203	7,039	3,166	1,872	1,872	1,062	64	16	23,384
Total	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

## 4.—COMPARATIVE STATEMENT OF THE POPULATION OF THE COMMONWEALTH

At the Censuses of 1901 and 1911, classified according to Age.

(Exclusive of Full-blooded Aborigines.)

Age last Birthday.	Population of the Commonwealth.								
	Census of 31st March, 1901.			Census of 3rd April, 1911.			Increase during 10 years.		
	Males.	Females.	Persons.	Males.	Females.	Persons.	Males.	Females.	Persons.
0	47,163	46,015	93,178	50,102	56,584	115,686	11,939	10,569	22,508
1	42,785	42,059	84,844	54,551	52,670	107,221	11,766	10,611	22,377
2	43,085	41,580	84,565	51,568	49,878	101,446	8,533	8,348	16,881
3	43,454	42,409	85,863	51,703	50,388	102,091	8,249	7,979	16,228
4	43,373	42,604	85,977	50,487	48,702	99,189	7,114	6,068	13,212
0-4	219,810	214,617	434,427	267,411	258,222	525,633	47,601	43,605	91,206
5	45,137	44,053	89,190	46,708	47,304	96,012	3,571	3,251	6,822
6	45,614	44,681	90,295	47,796	46,388	94,184	2,182	1,707	3,889
7	46,451	45,550	92,001	44,447	43,504	87,951	-2,004	-2,046	-4,050
8	46,851	45,447	92,298	44,653	43,932	88,585	-2,198	-1,515	-3,713
9	46,896	45,977	92,873	43,982	42,532	86,514	-2,914	-3,445	-6,359
5-9	230,949	225,708	456,657	229,586	223,660	453,246	-1,363	-2,048	-3,411
10	46,649	45,635	92,284	44,917	44,139	89,056	-1,732	-1,496	-3,228
11	43,727	42,840	86,567	44,656	44,152	88,808	929	1,312	2,241
12	43,979	43,229	87,208	40,678	40,940	81,618	-3,301	-2,289	-5,590
13	42,075	41,803	83,878	42,369	41,026	83,395	294	-777	-483
14	41,878	41,181	83,059	43,184	42,100	85,284	1,306	919	2,225
10-14	218,308	214,688	432,996	215,804	212,357	428,161	-2,504	-2,331	-4,835
15-19	189,472	188,314	377,786	226,831	221,705	448,536	37,359	33,391	70,750
20	35,232	36,268	71,500	46,839	45,488	92,327	11,607	9,220	20,827
Under 21	893,771	879,595	1,773,366	966,471	961,432	1,947,903	92,700	81,837	174,537
21-24	139,128	140,322	279,450	181,340	172,603	353,943	42,212	32,281	74,493
25-29	162,234	156,640	318,874	199,922	188,454	388,376	37,688	31,814	69,502
30-34	156,075	136,047	292,122	171,119	159,841	330,960	15,044	23,794	38,838
35-39	151,849	120,438	272,287	151,872	139,560	291,432	23	19,122	19,145
40-44	125,826	95,146	220,972	144,867	124,651	269,518	19,041	29,505	48,546
45-49	88,523	65,729	154,252	133,079	108,537	241,616	44,556	42,808	87,364
50-54	67,156	52,588	119,744	108,132	84,787	192,919	40,976	32,199	73,175
55-59	52,595	43,057	95,652	72,058	56,923	128,981	19,463	13,866	33,329
60-64	45,976	37,096	83,072	51,416	43,974	95,390	5,440	6,878	12,318
65-69	38,478	30,421	68,899	40,227	36,464	76,691	1,749	6,043	7,792
70-74	25,876	18,412	44,288	29,063	26,007	55,070	3,187	7,595	10,782
75-79	12,605	9,689	22,294	18,831	16,501	35,332	6,226	6,812	13,038
80-84	6,033	5,038	11,071	8,808	7,689	16,497	2,775	2,651	5,426
85-89	1,662	1,562	3,224	2,638	2,706	5,344	976	1,144	2,120
90-94	409	385	794	640	702	1,342	231	317	548
95-99	99	70	169	116	127	243	17	57	74
100 & upwards	30	20	50	35	29	64	5	9	1
21 & upwards	1,074,554	912,660	1,987,214	1,314,163	1,169,555	2,483,718	239,609	256,895	496,504
Unspecified	9,603	3,618	13,221	12,401	10,983	23,384	2,798	7,365	10,163
Total	1,977,928	1,795,873	3,773,801	2,313,035	2,141,970	4,455,005	335,107	346,097	681,204

Note. — denotes decrease.

**5.—MALE POPULATION OF THE STATES AND TERRITORIES OF THE COMMONWEALTH**

At the Census of 3rd April, 1911, classified according to birthplace.

(Exclusive of Full-blooded Aborigines.)

Birthplace.	States.						Territories.		Total C'with.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
<b>AUSTRALASIA—</b>									
Commonwealth of Aust.—									
New South Wales...	608,517	13,273	23,879	3,818	9,623	1,063	151	755	661,079
Victoria ...	42,701	495,490	10,479	7,490	30,864	4,590	123	39	591,776
Queensland ...	11,018	1,954	192,682	441	2,006	183	156	6	208,446
South Australia ...	13,005	11,400	2,154	157,578	13,275	445	285	4	198,146
Western Australia ...	1,253	2,244	255	1,274	52,743	115	8	1	57,893
Tasmania ...	5,209	8,615	1,223	626	1,386	80,115	14	4	97,192
Northern Territory ...	12	10	11	37	13		282		365
Australia (undefined)	10,021	8,673	2,074	2,547	1,359	437	10	35	25,156
New Zealand ...	7,296	4,968	1,632	554	1,819	574	17	2	16,862
<b>EUROPE—England ...</b>	74,754	48,063	38,583	16,753	20,866	5,230	121	71	204,441
Wales ...	2,791	1,495	1,491	537	890	156	13	1	7,374
Scotland ...	19,403	14,200	12,146	3,298	4,702	1,145	43	15	54,952
Ireland ...	24,098	19,169	16,186	3,695	5,733	1,046	47	26	70,000
Isle of Man ...	261	187	102	47	72	11		1	681
Other European Brit. Poss.	495	396	214	163	146	31	2		1,449
Austria-Hungary ...	520	280	277	122	1,173	24	1		2,397
Belgium ...	90	72	29	24	20	6			241
Denmark ...	1,083	779	1,732	243	347	78	3	1	4,266
France ...	935	471	247	116	173	27	4		1,973
Germany ...	5,323	4,343	6,983	3,046	1,647	353	20	2	21,717
Greece ...	764	279	248	75	323	4			1,693
Italy ...	1,332	1,140	748	153	2,151	17	2		5,543
Netherlands ...	202	151	84	125	73	8			643
Norway ...	964	726	478	437	386	42	5		3,088
Portugal ...	77	38	17	7	9	9	1		158
Russia ...	1,218	777	581	334	463	37	3		3,413
Spain ...	90	159	78	9	147	6			489
Sweden ...	1,679	1,138	840	617	700	107	3		5,084
Switzerland ...	340	492	259	72	122	13	1		1,299
Other European Countries	134	71	80	46	128	3			462
<b>ASIA—British India ...</b>	1,764	1,179	629	545	748	175	7	2	5,049
Ceylon ...	131	60	180	9	73	10	8	1	472
Hong Kong ...	121	65	69	9	89	2			355
Straits Settlements...	57	28	115	11	415		15		641
Other Asiatic British Poss.	22	20	36	5	64	3	2		152
Afghanistan ...	31	6	11	37	109		6		200
Arabia ...	17	3	6	3	2	1	1		33
China ...	7,500	4,246	5,393	231	1,601	353	1,119	1	20,453
Japan ...	125	47	1,387	17	1,599	1	84		3,260
Java ...	17	11	288	3	209		7		535
Philippine Islands ...	22	5	91		260		46		424
Syria ...	448	186	71	127	29	33		1	895
Other Asiatic Countries	132	83	102	36	407	1	64		815
<b>AFRICA—Cape of Good Hope</b>	168	103	48	23	21	11			374
Mauritius ...	145	116	58	42	40	10	1		412
Natal ...	51	55	17	8	9	9			149
Orange Free State ...	3	2	2		5	2			14
Transvaal ...	50	41	13	13	12	5			139
South Africa (undefined)	554	381	140	93	122	21	2		1,313
Other African British Poss.	28	14	10	3	8	1	3		67
Egypt ...	38	19	18	7	15	3			100
Other African Countries	50	16	21	4	12	8	3		114
<b>AMERICA—Barbadoes</b>	21	8	5	6	15				55
Canada ...	852	518	356	112	232	52	3	1	2,126
Jamaica ...	69	42	29	13	13	2			168
Newfoundland ...	34	33	17	5	7	3			99
Other American Brit. Poss.	67	53	41	17	33	6			217
Argentine Republic...	26	13	11	3	12	3			68
Brazil ...	19	15	13	3	5	5			69
Chile ...	29	12	11	1	5	1			59
Mexico ...	15	10	8	2	7				42
Peru ...	16	4			1				25
United States of America	1,844	1,085	661	323	423	103	7	3	4,449
Other American Countries	119	81	62	36	60	8	2		370
<b>POLYNESIA—Fiji</b>	227	67	74	10	20	11	5		414
Friendly Islands ...	28	9	5	2	2				46
Papua ...	8	1	387	1	1				398
Other Polynesian Brit. Pos.	54		198	1	6				259
New Caledonia ...	114	10	45		2				178
New Hebrides ...	70	16	196	1	8	2	3		230
Samoa ...	27	5	29	4	5				70
Other Polynesian Islands	42	9	189	3	4				251
Sth. Sea Ids. (so described)	106	4	444	1	9				570
At Sea ...	817	630	342	211	146	82	1		2,209
Unspecified ...	6,036	5,225	1,877	1,091	1,341	801	27	20	16,418
<b>Total ...</b>	<b>857,698</b>	<b>655,591</b>	<b>329,506</b>	<b>207,358</b>	<b>161,565</b>	<b>97,591</b>	<b>2,734</b>	<b>992</b>	<b>2,313,035</b>

For Summary, see page 1228.

## 6.—FEMALE POPULATION OF THE STATES &amp; TERRITORIES OF THE COMMONWEALTH

At Census of 3rd April, 1911, classified according to birthplace (exclusive of Full blooded Aborigines).

Birthplace.	States.						Territories.		Total C'wth.
	N.S.W.	Vict.	Q'nd.	S.A.	W.A.	Tas.	N. Ter.	Fed. C. Ter.	
AUSTRALASIA—									
Commonwealth of Aust.—									
New South Wales	610,340	15,419	15,042	3,628	7,601	1,267	34	622	653,953
Victoria	34,835	514,729	5,464	7,017	23,749	4,189	20	8	590,011
Queensland	12,275	2,448	189,534	392	1,660	249	57	3	206,618
South Australia	11,189	12,127	1,194	160,495	11,060	477	79	1	196,622
Western Australia	1,229	2,292	227	1,311	51,465	126	7	...	56,657
Tasmania	5,112	10,415	575	602	1,093	78,774	6	1	96,578
Northern Territory	5	8	17	43	8	1	263	...	345
Australia (undefined)	10,498	9,848	1,885	2,962	1,145	466	10	21	26,835
New Zealand	6,667	5,099	944	432	1,235	626	1	2	15,006
EUROPE—England									
Wales	47,342	38,629	26,683	13,145	11,987	3,758	24	21	141,589
Scotland	1,691	1,195	1,129	348	435	101	2	...	4,801
Ireland	11,857	12,377	8,384	2,353	2,221	927	4	8	38,131
Isle of Man	22,558	22,308	15,413	4,302	3,718	1,109	8	18	69,434
Other European Brit. Poss.	106	102	55	27	31	5	...	...	336
Austria-Hungary	268	339	112	97	92	21	...	...	929
Belgium	116	75	55	23	107	1	...	...	377
Denmark	39	27	9	8	11	3	1	...	98
France	214	132	909	30	69	43	...	...	1,397
Germany	412	263	86	50	81	11	...	...	903
Greece	1,918	1,799	4,996	1,931	389	237	2	1	11,273
Italy	58	18	14	1	12	2	...	...	105
Netherlands	391	359	181	31	210	4	...	...	1,176
Norway	35	35	13	5	11	2	1	...	102
Portugal	68	81	207	16	40	1	...	...	413
Russia	7	6	...	...	2	...	...	...	15
Spain	318	296	214	45	163	7	...	...	1,043
Sweden	44	64	19	10	31	1	...	...	169
Switzerland	118	82	214	36	40	12	...	...	502
Other European Countries	102	140	117	38	32	8	...	...	437
ASIA—British India									
Ceylon	50	27	29	5	27	...	...	...	138
Hong Kong	518	427	192	121	192	144	1	...	1,595
Straits Settlements	36	40	25	6	16	16	...	...	139
Other Asiatic British Poss.	29	14	5	5	4	1	...	...	58
Afghanistan	18	15	11	4	9	2	1	...	60
Arabia	12	15	6	...	2	2	...	...	37
China	...	...	...	...	...	...	...	...	...
Japan	1	...	1	...	...	...	...	...	2
Java	100	56	80	11	20	9	46	...	322
Philippine Islands	14	10	65	5	115	...	5	...	214
Syria	13	12	16	...	1	1	...	...	43
Other Asiatic Countries	12	5	1	...	1	...	1	...	20
AFRICA—Cape of Good Hope									
Mauritius	307	137	80	58	26	24	...	...	632
Natal	17	6	7	1	5	...	...	...	36
Orange Free State	163	147	31	15	14	15	...	...	385
Transvaal	95	83	25	24	15	3	...	...	245
South Africa (undefined)	46	55	11	9	17	8	...	...	146
Other African British Poss.	7	3	1	...	3	...	...	...	14
Egypt	46	48	18	7	13	5	...	...	137
Other African Countries	503	373	97	98	104	37	...	...	1,212
AMERICA—Barbadoes	10	24	4	4	5	2	...	...	49
Canada	26	7	3	3	7	1	...	...	47
Jamaica	16	11	5	4	1	4	...	...	41
Newfoundland	6	4	3	...	2	...	...	...	15
Other American Brit. Poss.	280	262	99	65	83	28	1	...	818
Argentina Republic	21	45	11	2	7	1	...	...	87
Brazil	10	15	5	1	2	...	...	...	33
Chile	18	29	15	10	14	1	...	...	87
Mexico	9	5	4	3	1	4	...	...	26
Peru	7	15	5	3	3	3	...	...	36
United States of America	11	8	2	...	3	...	...	...	24
Other American Countries	11	4	3	1	4	...	...	...	23
POLYNESIA—Fiji									
Friendly Islands	3	3	2	...	1	...	...	...	9
Papua	890	665	281	138	168	51	...	...	2,193
Other Polynesian Brit. Poss.	47	54	40	18	22	8	...	...	189
New Caledonia	249	102	40	14	17	15	1	...	438
New Hebrides	38	4	1	6	...	...	...	...	49
Samoa	15	4	13	2	1	...	...	...	35
Other Polynesian Islands	7	...	8	1	...	...	...	...	16
St. Sea Islds.(so described)	129	16	11	5	7	1	...	...	169
At sea	18	15	11	2	...	4	...	...	50
Unspecified	31	6	13	2	...	...	...	...	54
	36	11	18	...	3	...	...	...	68
	5	...	46	...	1	3	...	...	55
	662	673	287	211	135	60	1	...	2,029
	4,782	5,793	984	958	778	739	1	15	14,050
Total	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

For Summary, see page 1228.

## 7.—TOTAL POPULATION OF THE STATES AND TERRITORIES OF THE COMMONWEALTH

At Census of 3rd April, 1911, classified according to birthplace (exclusive of Full-blooded Aborigines).

Birthplace.	States					Territories.		Total C'with.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	N. Ter.	
<b>AUSTRALASIA—</b>								
Commonwealth of Aust.—								
New South Wales	1,218,857	28,692	38,921	7,446	17,224	2,330	185	1,377
Victoria	77,536	1,010,219	15,943	14,507	54,613	8,779	143	47
Queensland	23,293	4,402	382,216	833	3,666	432	213	9
South Australia	24,194	23,527	3,348	318,073	21,335	922	364	5
Western Australia	2,482	4,536	482	2,585	104,208	241	15	1
Tasmania	10,321	19,030	1,798	1,228	2,179	158,889	20	5
Northern Territory	17	18	28	80	21	1	545	
Australia (undefined)	20,519	18,521	3,959	5,509	2,504	903	20	56
New Zealand	13,963	10,067	2,576	986	3,054	1,200	18	4
<b>EUROPE—England</b>	122,096	86,692	65,266	29,898	32,853	8,988	145	92
Wales	4,382	2,690	2,620	885	1,325	257	15	1
Scotland	31,260	26,577	20,530	5,651	6,923	2,072	47	23
Ireland	46,656	41,477	31,599	7,997	9,451	2,155	55	44
Isle of Man	367	289	157	74	103	16		1
Other European Brit. Poss.	763	737	326	260	238	52	2	
Austria-Hungary	636	355	332	145	1,280	25	1	
Belgium	129	99	38	32	31	9	1	
Denmark	1,297	911	2,641	273	416	121	3	1
France	1,347	734	333	166	254	38	4	
Germany	7,241	6,142	11,979	4,977	2,036	590	22	3
Greece	822	297	262	76	335	6		
Italy	1,723	1,499	929	184	2,361	21	2	
Netherlands	237	186	97	130	84	10	1	
Norway	1,032	807	685	453	426	43	5	
Portugal	84	44	17	7	11	9	1	
Russia	1,536	1,073	795	379	626	44	3	
Spain	134	223	97	19	178	7		
Sweden	1,797	1,220	1,054	653	740	119	3	
Switzerland	442	632	376	110	154	21	1	
Other European Countries	184	98	109	51	155	3		
<b>ASIA—British India</b>	2,282	1,606	821	666	940	319	8	2
Ceylon	167	100	205	15	89	26	8	1
Hong Kong	150	79	74	14	93	3		
Straits Settlements	75	43	126	15	424	2	16	
Other Asiatic British Poss.	34	35	42	5	66	5	2	
Afghanistan	31	6	11	37	109		6	
Arabia	18	3	7	3	2	1	1	
China	7,609	4,302	5,473	242	1,621	362	1,165	1
Japan	139	57	1,452	22	1,714	1	89	
Java	30	23	304	3	210	1	7	
Philippine Islands	34	10	92		261		47	
Syria	755	323	151	185	55	57		1
Other Asiatic Countries	139	89	109	37	412	1	64	
<b>AFRICA—Cape of Good Hope</b>	331	250	79	38	35	26		
Mauritius	240	199	83	66	55	13	1	
Natal	97	110	28	17	26	17		
Orange Free State	10	5	3		8	2		
Transvaal	96	89	36	20	25	10		
South Africa (undefined)	1,057	754	237	191	226	58	2	
Other African British Poss.	38	38	14	7	13	3	3	
Egypt	64	26	21	10	22	4		
Other African Countries	66	27	26	8	13	12	3	
<b>AMERICA—Barbadoes</b>	27	12	8	6	17			
Canada	1,132	780	455	177	315	80	3	2
Jamaica	90	87	40	15	20	3		
Newfoundland	44	48	22	6	9	3		
Other American Brit. Poss.	85	62	56	27	47	7		
Argentine Republic	35	18	15	6	13	7		
Brazil	26	30	18	6	8	8		
Chile	40	20	13	1	8	1		
Mexico	26	14	11	3	11			
Peru	19	7	6		2			
United States of America	2,734	1,750	942	461	591	154	7	3
Other American Countries	166	135	102	56	82	16	2	
<b>POLYNESIA—Fiji</b>	476	189	114	24	37	26	6	
Friendly Islands	66	13	6	8	2			
Papua	23	5	400	3	2			
Other Polynesian Brit. Pos.	61		206	2	6			
New Caledonia	243	26	56	5	15			
New Hebrides	88	31	207	3	2	6	3	
Samoa	58	11	42	6	7			
Other Polynesian Islands	78	20	207	1	10	6	3	
Sth. Sea Ids. (so described)	111	4	490					
At Sea	1,479	1,303	629	422	281	122	2	
Unspecified	10,818	11,018	2,861	2,049	2,119	1,540	28	35
<b>Total</b>	<b>1,646,734</b>	<b>1,315,551</b>	<b>605,813</b>	<b>408,558</b>	<b>282,114</b>	<b>191,211</b>	<b>3,310</b>	<b>1,714</b>
								<b>4,455,005</b>

For Summary, see page 1228.



## 8.—COMPARATIVE STATEMENT OF THE POPULATION OF THE COMMONWEALTH

At the Censuses of 1901 and 1911, classified according to Birthplace.  
(Exclusive of Full-blooded Aborigines.)

Birthplace.	Census of 31st March, 1901.			Census of 3rd April, 1911.			Increase during 10 years.		
	Males.	Females	Total.	Males.	Females	Total.	Males.	Female	Total.
<b>AUSTRALASIA—</b>									
C'wealth of Aust.—									
New South Wales	524,239	520,526	1,044,765	661,079	653,953	1,315,032	136,840	133,427	270,267
Victoria ...	499,748	500,082	999,830	591,776	590,011	1,181,787	92,028	89,929	181,957
Queensland ...	153,438	152,431	305,869	208,446	206,618	415,064	55,008	54,187	109,195
S.A. (incl. N. Ter.)	168,199	167,529	335,728	198,511	196,967	395,478	30,312	29,438	59,750
West. Australia	28,288	27,980	56,268	57,893	56,657	114,550	29,605	28,677	58,282
Tasmania	81,999	81,447	163,446	97,192	96,578	193,770	15,193	15,131	30,324
Aust. (undefined)	1,182	1,215	2,397	25,156	26,835	51,991	23,974	25,620	49,594
New Zealand ...	13,568	12,220	25,788	16,862	15,006	31,868	3,294	2,786	6,080
<b>EUROPE—</b>									
England & Wales*	230,332	162,969	393,321	212,496	146,716	359,212	-17,836	-16,273	-34,109
Scotland ...	58,754	42,909	101,753	54,952	38,131	93,083	-3,802	-4,868	-8,670
Ireland ...	92,037	92,048	184,085	70,000	69,434	139,434	-22,037	-22,614	-44,651
Other Eur. Br. Pos.	265	165	430	1,449	929	2,378	1,184	764	1,948
Austria-Hungary...	1,661	241	1,902	2,397	377	2,774	736	136	872
Belgium ...	264	93	357	241	98	339	23	5	18
Denmark ...	4,749	1,532	6,281	4,266	1,397	5,663	483	135	618
France ...	2,618	974	3,592	1,973	903	2,876	645	71	716
Germany ...	25,002	13,350	38,352	21,717	11,273	32,990	-3,285	-2,077	-5,362
Greece ...	815	63	878	1,693	105	1,798	878	42	920
Italy ...	4,871	807	5,678	5,543	1,176	6,719	672	369	1,041
Netherlands ...	511	83	594	643	102	745	132	19	151
Portugal ...	287	24	311	158	15	173	127	9	138
Russia ...	2,648	710	3,358	3,413	1,043	4,456	765	333	1,098
Spain ...	384	131	515	489	169	658	105	38	143
Sweden & Norway	8,881	982	9,863	8,122	915	9,037	759	67	826
Switzerland	1,611	428	2,039	1,299	437	1,736	312	9	303
Other Eur. Counts.	387	136	523	462	138	600	75	2	77
<b>ASIA—</b>									
British India ...	6,075	1,562	7,637	5,049	1,595	6,644	-1,026	33	-993
Ceylon ...	479	130	609	472	139	611	7	9	2
Hong Kong ...	138	29	167	355	58	413	217	29	246
Straits Settlements	618	46	664	641	60	701	23	14	37
Other Asiatic Br. Pos.	80	30	110	152	37	189	72	7	79
Afghanistan ...	393	...	393	200	...	200	193	...	193
Arabia ...	53	6	59	33	2	35	20	6	26
China ...	29,513	394	29,907	20,453	322	20,775	-9,060	72	-9,132
Japan ...	3,167	426	3,593	3,260	214	3,474	93	212	119
Java ...	267	27	294	535	43	578	268	16	284
Philippine Islands	677	12	689	424	20	444	-253	8	-245
Syria ...	986	512	1,498	895	632	1,527	91	120	29
Other Asiatic Cties.	1,326	66	1,392	815	36	851	511	30	541
<b>AFRICA—</b>									
Cape of Good Hope	452	377	829	374	285	759	78	8	70
Mauritius ...	477	263	740	412	245	657	-65	18	-83
Natal ...	66	40	106	149	146	295	85	106	189
Orange Free State	12	2	14	28	13	41	12	13	25
Transvaal ...	13	14	26	139	137	276	127	123	250
S. Africa (undefined)	202	244	536	1,313	1,212	2,525	1,021	968	1,989
Other African B.P.	71	51	122	67	49	116	4	6	6
Egypt ...	76	32	108	100	47	147	24	15	39
Other African Cties.	294	105	399	114	41	155	180	64	244
<b>AMERICA—</b>									
Barbadoes ...	64	14	78	55	15	70	9	1	8
Canada ...	2,195	811	3,006	2,126	818	2,944	69	7	62
Jamaica ...	250	112	362	168	87	255	82	25	107
Newfoundland ...	110	43	153	99	33	132	11	10	21
Other Amer. B. Pos.	519	171	690	217	87	304	-302	84	-386
Argentina Republic	28	16	44	68	26	94	40	10	50
Brazil ...	72	33	105	60	36	96	12	3	9
Chile ...	69	21	90	59	24	83	10	3	7
Mexico ...	43	18	61	42	23	65	1	5	4
Peru ...	21	7	28	25	9	34	4	2	6
U.S. of America ...	5,217	2,231	7,448	4,449	2,193	6,642	768	38	806
Other Amer. Cties.	301	141	442	370	189	559	69	48	117
<b>POLYNESIA—</b>									
Fiji ...	307	278	585	414	438	852	107	160	267
Friendly Islands ...	41	42	83	46	49	95	5	7	12
Papua ...	6	3	9	308	35	433	392	32	424
Other Polyn. B.P.	47	15	62	259	16	275	212	1	213
New Caledonia ...	131	95	226	178	169	347	47	74	121
New Hebrides ...	71	28	99	200	50	340	219	22	241
Samoa ...	43	42	85	70	54	124	27	12	39
Other Polyn. Islds.	51	35	86	251	68	319	200	33	233
S. Sea Isds. (so des.)	8,701	427	9,128	570	55	625	-8,131	-372	-8,503
At Sea ...	2,747	2,456	5,203	2,209	2,029	4,238	-538	-427	-965
Unspecified ...	4,642	3,280	7,922	16,418	14,050	30,468	11,776	10,770	22,546
<b>Total</b> ...	<b>1,977,928</b>	<b>1,795,873</b>	<b>3,773,801</b>	<b>2,313,035</b>	<b>2,141,970</b>	<b>4,455,005</b>	<b>335,107</b>	<b>346,097</b>	<b>681,204</b>

\* Including the Isle of Man. Note. — denotes decrease. For Summary, see page 1228.

## 5.—MALE POPULATION OF STATES AND TERRITORIES OF COMMONWEALTH.

Continued from p. 1224.

## SUMMARY.

Birthplace.	States.						Territories.		Total C'with.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
Total Commonwealth	691,736	541,659	232,757	173,811	111,269	86,948	1,029	844	1,840,053
" AUSTRALASIA ...	699,032	546,627	234,389	174,365	113,088	87,522	1,046	846	1,856,915
" EUROPE ...	136,553	94,428	81,403	29,919	40,271	8,353	269	117	391,313
" ASIA ...	10,386	5,939	8,378	1,033	5,605	579	1,359	5	33,284
" AFRICA ...	1,087	747	332	193	244	70	9	...	2,682
" AMERICA ...	3,111	1,874	1,218	523	813	183	12	...	7,738
" POLYNESIA ...	676	121	1,567	23	57	21	11	...	2,476

## 6.—FEMALE POPULATION OF STATES AND TERRITORIES OF COMMONWEALTH.

Continued from p. 1225.

## SUMMARY.

Total Commonwealth	685,483	567,286	213,938	176,450	97,781	85,549	476	656	1,827,619
" AUSTRALASIA ...	692,150	572,385	214,882	176,882	99,016	86,175	477	658	1,842,625
" EUROPE ...	87,612	78,354	58,839	22,501	19,709	6,253	42	48	273,358
" ASIA ...	1,077	737	489	211	391	199	54	...	3,158
" AFRICA ...	912	751	195	164	179	75	...	...	2,276
" AMERICA ...	1,313	1,109	470	241	310	96	...	1	3,540
" POLYNESIA ...	528	158	161	32	31	23	1	...	934

## 7.—TOTAL POPULATION OF STATES AND TERRITORIES OF COMMONWEALTH.

Continued from p. 1226.

## SUMMARY.

Total Commonwealth	1,377,219	1,108,945	446,695	350,261	209,050	172,497	1,505	1,500	3,667,672
" AUSTRALASIA ...	1,391,182	1,119,012	449,271	351,247	212,104	173,697	1,523	1,504	3,699,540
" EUROPE ...	224,165	172,782	140,242	52,420	59,980	14,606	311	165	664,671
" ASIA ...	11,463	6,676	8,867	1,244	5,996	778	1,413	5	36,442
" AFRICA ...	1,999	1,498	527	357	423	145	9	...	4,958
" AMERICA ...	4,424	2,983	1,688	764	1,123	279	12	5	11,278
" POLYNESIA ...	1,204	279	1,728	55	88	44	12	...	3,410

## 8.—COMPARATIVE STATEMENT OF POPULATION OF COMMONWEALTH.

Continued from p. 1227.

## SUMMARY.

Birthplace.	Census of 31st March, 1901.			Census of 3rd April, 1911.			Increase during 10 years.		
	Males.	Females	Total.	Males.	Females	Total.	Males.	Female	Total.
Total, C'wealth ...	1,457,093	1,451,210	2,908,303	1,840,053	1,827,619	3,667,672	382,960	376,409	759,369
" AUSTRALASIA ...	1,470,661	1,463,430	2,934,091	1,856,915	1,842,625	3,699,540	386,254	379,195	765,449
" EUROPE ...	496,077	317,755	753,832	391,313	273,358	664,671	44,764	44,397	89,161
" ASIA ...	43,772	3,242	47,014	33,284	3,158	36,442	10,488	84	10,572
" AFRICA ...	1,742	1,127	2,869	2,682	2,276	4,958	940	1,149	2,089
" AMERICA ...	8,889	3,618	12,507	7,738	3,540	11,278	1,151	78	1,229
" POLYNESIA ...	9,398	965	10,363	2,476	934	3,410	6,922	31	6,953

Note. — denotes decrease.

**9.—MALE POPULATION OF THE STATES AND TERRITORIES OF THE COMMONWEALTH**

At the Census of 3rd April, 1911, classified according to Religion.

(Exclusive of Full-blooded Aborigines.)

Religion.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
I. CHRISTIAN.									
Church of England...	380,324	225,601	114,958	57,377	60,707	44,845	448	374	884,634
Presbyterian ...	96,354	116,653	40,894	11,817	15,628	8,018	128	99	289,591
Methodist ...	75,512	84,376	30,309	49,067	17,928	12,311	67	71	269,641
Baptist ...	9,891	14,134	6,665	10,355	2,504	2,198	14	...	45,661
Congregational ...	10,888	7,624	5,137	6,196	3,171	2,339	11	1	35,367
Lutheran ...	4,824	7,025	13,038	14,100	1,846	144	16	...	40,993
Church of Christ ...	2,865	7,356	1,203	4,107	1,331	519	...	1	17,382
Salvation Army ...	3,475	3,409	2,049	1,777	919	693	...	...	12,322
Seventh Day Adventist ...	806	551	286	241	420	232	...	...	2,536
Unitarian ...	512	314	91	239	103	48	...	...	1,307
Protestant (undefined)	21,309	13,376	10,896	7,232	6,182	4,043	29	12	63,079
Roman Catholic ...	190,122	131,648	71,623	25,469	31,979	14,267	322	373	465,803
Greek Catholic ...	885	385	393	116	374	19	...	...	2,172
Catholic (undefined)	18,214	7,526	4,349	3,465	3,018	2,159	12	29	38,772
Others ...	4,503	3,811	4,038	1,367	1,006	1,067	3	1	15,796
Total ...	820,484	623,789	305,929	192,825	147,116	92,902	1,050	961	2,185,056
II. NON-CHRISTIAN.									
Hebrew ...	4,062	3,214	415	393	1,008	73	...	...	9,165
Confucian ...	1,198	744	1,553	28	336	47	1,130	...	5,036
Mohammedan ...	776	360	606	411	1,508	10	34	1	3,706
Buddhist ...	437	48	776	25	1,703	96	25	...	3,110
Pagan ...	254	500	525	2	130	8	3	...	1,422
Others ...	2,238	752	1,752	130	228	31	64	...	5,195
Total ...	8,965	5,618	5,627	989	4,913	265	1,256	1	27,634
III. INDEFINITE.									
Freethinker ...	873	648	571	188	393	72	7	1	2,753
No Denomination ...	328	677	159	166	157	79	2	...	1,568
Agnostic ...	845	752	408	150	332	52	6	1	2,546
Others ...	1,022	1,270	524	287	341	81	5	1	3,531
Total ...	3,068	3,347	1,662	791	1,223	284	20	3	10,396
IV. NO RELIGION.									
No Religion ...	2,228	1,931	1,485	731	993	158	31	2	7,559
Atheist ...	184	126	91	43	66	6	...	...	516
Others ...	59	53	19	13	15	5	...	...	164
Total ...	2,471	2,110	1,595	787	1,074	169	31	2	8,239
V. OBJECT TO STATE ...	14,989	14,212	8,981	9,930	4,547	3,008	86	13	55,766
VI. UNSPECIFIED ...	7,721	6,515	5,712	2,036	2,692	963	291	12	25,942
Grand Total ...	857,698	653,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

# 10.—FEMALE POPULATION OF THE STATES AND TERRITORIES OF THE COMMONWEALTH OF AUSTRALIA

At the Census of 3rd April, 1911, Classified according to Religion.

(Exclusive of Full-blooded Aborigines.)

Religion.	States.						Territories.		C'wlth.
	N.S.W.	Vict.	Q'nd.	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
I.—CHRISTIAN.									
Church of England ...	353,676	225,486	97,744	56,404	48,728	43,313	165	293	825,909
Presbyterian ...	86,557	117,900	34,666	10,750	11,050	7,717	16	89	268,745
Methodist ...	75,762	92,286	29,611	51,335	16,420	12,664	40	47	278,165
Baptist ...	10,788	17,110	7,050	11,608	2,297	2,559	1	...	51,413
Congregational ...	11,767	8,860	5,308	7,161	3,032	2,541	10	...	38,679
Lutheran ...	2,263	4,657	11,197	12,581	645	53	6	...	31,402
Church of Christ ...	3,547	9,155	1,360	5,217	1,477	608	1	1	21,366
Salvation Army ...	3,938	4,390	2,260	2,058	971	726	...	...	14,343
Seventh Day Adventist ...	1,193	892	346	381	465	282	...	...	3,559
Unitarian ...	332	198	56	215	41	25	1	...	368
Protestant (undefined) ...	15,595	10,740	7,506	6,003	3,789	3,130	9	10	46,782
Roman Catholic ...	185,269	140,106	65,463	25,495	24,637	14,314	92	246	455,622
Greek Catholic ...	199	88	101	34	54	19	...	...	474
Catholic (undefined) ...	18,408	7,153	3,643	3,129	2,328	1,921	6	19	36,607
Others ...	4,552	4,243	3,584	1,347	730	1,066	2	...	15,524
Total ...	773,845	643,264	269,895	193,718	116,644	90,938	349	705	2,089,358
II.—NON-CHRISTIAN.									
Hebrew ...	3,598	3,056	257	372	782	57	...	...	8,122
Confucian ...	6	4	41	...	9	...	98	...	158
Mohammedan ...	43	31	86	29	9	...	4	...	202
Buddhist ...	11	...	50	...	92	3	3	...	159
Pagan ...	...	1	10	1	13	...	...	...	25
Others ...	150	132	119	40	32	11	1	...	485
Total ...	3,808	3,224	563	442	937	71	106	...	9,151
III.—INDEFINITE.									
Freethinker ...	164	150	78	35	54	19	1	...	501
No Denomination ...	235	501	86	122	110	66	...	...	1,120
Agnostic ...	131	221	90	36	48	11	1	...	538
Others ...	613	1,005	181	151	120	46	...	...	2,116
Total ...	1,143	1,877	435	344	332	142	2	...	4,275
IV.—NO RELIGION.									
No Religion ...	446	504	298	217	181	40	6	...	1,692
Atheist ...	20	22	12	4	5	...	...	...	63
Others ...	15	5	1	...	...	1	...	...	22
Total ...	481	531	311	221	186	41	6	...	1,777
V.—OBJECT TO STATE ...	6,997	7,758	3,611	5,331	1,598	1,921	12	9	27,237
VI.—UNSPECIFIED ...	2,762	3,306	1,492	1,144	852	507	101	8	10,172
Grand Total ...	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

# 11.—TOTAL POPULATION OF THE STATES AND TERRITORIES OF THE COMMONWEALTH OF AUSTRALIA

At the Census of 3rd April, 1911, Classified according to Religion.

(Exclusive of Full-blooded Aborigines.)

Religion.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
<b>I. CHRISTIAN.</b>									
Church of England...	734,000	451,087	212,702	113,781	109,435	88,158	613	667	1,710,443
Presbyterian ...	182,911	234,553	75,560	22,567	26,678	15,735	144	188	558,336
Methodist ...	151,274	176,662	59,920	100,402	34,348	24,975	107	118	547,806
Baptist ...	20,679	31,244	13,715	21,863	4,801	4,757	15	...	97,074
Congregational ...	22,655	16,484	10,445	13,357	6,203	4,880	21	1	74,046
Lutheran ...	7,087	11,682	24,235	26,681	2,491	197	22	...	72,395
Church of Christ ...	6,412	16,511	2,563	9,324	2,808	1,127	1	2	32,743
Salvation Army ...	7,413	7,799	4,309	3,835	1,890	1,419	...	...	26,665
Seventh Day Adventist ...	1,999	1,443	632	622	885	514	...	...	6,095
Unitarian ...	844	512	147	454	144	73	1	...	2,175
Protestant (undefined) ...	36,904	24,116	18,402	13,235	9,971	7,173	38	22	109,861
Roman Catholic ...	375,391	271,754	137,086	50,964	56,616	28,581	414	619	921,425
Greek Catholic ...	1,083	473	494	150	408	38	...	...	2,646
Catholic (undefined) ...	36,622	14,679	7,992	6,594	5,346	4,080	18	48	75,379
Others ...	9,055	8,054	7,622	2,714	1,736	2,133	5	1	31,320
<b>Total ...</b>	<b>1,594,329</b>	<b>1,267,053</b>	<b>575,824</b>	<b>386,543</b>	<b>263,760</b>	<b>183,840</b>	<b>1,399</b>	<b>1,666</b>	<b>4,274,414</b>
<b>II. NON-CHRISTIAN</b>									
Hebrew ...	7,660	6,270	672	765	1,790	130	...	...	17,287
Confucian ...	1,204	748	1,594	28	345	47	1,228	...	5,194
Mohammedan ...	819	391	692	440	1,517	10	38	1	3,908
Buddhist ...	448	48	826	25	1,795	99	28	...	3,269
Pagan ...	254	501	535	3	143	8	3	...	1,447
Others ...	2,388	884	1,871	170	260	42	65	...	5,680
<b>Total ...</b>	<b>12,773</b>	<b>8,842</b>	<b>6,190</b>	<b>1,431</b>	<b>5,850</b>	<b>336</b>	<b>1,362</b>	<b>1</b>	<b>36,785</b>
<b>III. INDEFINITE.</b>									
Freethinker ...	1,037	798	649	223	447	91	8	1	3,254
No Denomination ...	563	1,178	245	288	267	145	2	...	2,688
Agnostic ...	976	973	498	186	380	63	7	1	3,084
Others ...	1,635	2,275	705	438	461	127	5	1	5,647
<b>Total ...</b>	<b>4,211</b>	<b>5,224</b>	<b>2,097</b>	<b>1,135</b>	<b>1,555</b>	<b>426</b>	<b>22</b>	<b>3</b>	<b>14,673</b>
<b>IV. NO RELIGION.</b>									
No Religion ...	2,674	2,435	1,783	948	1,174	198	37	2	9,251
Atheist ...	204	148	103	47	71	6	...	...	579
Others ...	74	58	20	13	15	6	...	...	186
<b>Total ...</b>	<b>2,952</b>	<b>2,641</b>	<b>1,906</b>	<b>1,008</b>	<b>1,260</b>	<b>210</b>	<b>37</b>	<b>2</b>	<b>10,016</b>
<b>V. OBJECT TO STATE ...</b>	<b>21,986</b>	<b>21,970</b>	<b>12,592</b>	<b>15,261</b>	<b>6,145</b>	<b>4,929</b>	<b>96</b>	<b>22</b>	<b>83,003</b>
<b>VI. UNSPECIFIED ...</b>	<b>10,483</b>	<b>9,821</b>	<b>7,204</b>	<b>3,180</b>	<b>3,544</b>	<b>1,470</b>	<b>392</b>	<b>20</b>	<b>36,114</b>
<b>Grand Total ...</b>	<b>1,646,734</b>	<b>1,315,551</b>	<b>605,813</b>	<b>408,558</b>	<b>282,114</b>	<b>191,211</b>	<b>3,310</b>	<b>1,714</b>	<b>4,455,005</b>

## 12.—COMPARATIVE STATEMENT OF THE POPULATION OF THE COMMONWEALTH OF AUSTRALIA

At the Censuses of 1901 and 1911, Classified according to Religion.

(Exclusive of Full-blooded Aborigines.)

Religion.	Population of the Commonwealth.						Increase during 10 Years.		
	Census of 31st March, 1901.			Census of 3rd April, 1911.					
	Males.	Females	Persons.	Males.	Females	Persons.	Males.	Female	Persons.
<b>I.—CHRISTIAN.</b>									
Church of England...	783,413	714,163	1,497,576	884,634	825,809	1,710,443	101,221	111,646	212,867
Presbyterian ...	221,601	204,504	426,105	289,591	268,745	558,336	67,990	64,241	132,231
Methodist ...	251,611	252,490	504,101	269,641	278,165	547,806	18,030	25,675	43,705
Baptist ...	42,662	46,676	89,338	45,661	51,413	97,074	2,999	4,737	7,736
Congregational ...	35,603	37,958	73,561	35,367	38,679	74,046	—	236	721
Lutheran ...	43,329	31,692	75,021	40,993	31,402	72,395	—	2,336	290
Church of Christ ...	11,265	12,927	24,192	17,382	21,366	38,748	6,117	8,439	14,556
Salvation Army ...	14,802	16,298	31,100	12,322	14,343	26,665	—	2,480	1,955
Seventh Day Advnt. ...	1,411	1,921	3,332	2,536	3,559	6,095	1,125	1,638	2,763
Unitarian ...	1,620	1,009	2,629	1,307	868	2,175	—	313	141
Protestant (undefined) ...	11,485	9,073	20,558	63,079	46,782	109,861	51,594	37,709	89,303
Roman Catholic ...	433,504	417,116	850,620	465,803	455,622	921,425	32,239	38,506	70,835
Greek Catholic ...	1,075	239	1,314	2,172	474	2,646	1,097	235	1,332
Catholic (undefined) ...	2,748	2,431	5,179	38,772	36,607	75,379	36,024	34,176	70,200
Others ...	10,944	10,879	21,823	15,796	15,524	31,320	4,852	4,645	9,497
Total ...	1,867,073	1,759,376	3,626,449	2,185,056	2,089,358	4,274,414	317,983	329,982	647,965
<b>II.—NON-CHRISTIAN.</b>									
Hebrew ...	8,137	7,102	15,239	9,165	8,122	17,287	1,028	1,020	2,048
Confucian ...	34,712	954	35,666	5,036	158	5,194	—21,438	—410	—21,848
Mohammedan ...				3,706	202	3,908			
Buddhist ...				3,110	159	3,269			
Pagan ...				1,422	25	1,447			
Others ...	1,784	682	2,466	5,195	485	5,680	3,411	197	3,214
Total ...	44,633	8,738	53,371	27,634	9,151	36,785	—16,999	413	—16,586
<b>III.—INDEFINITE.</b>									
Freethinker ...	7,863	1,319	9,182	2,753	501	3,254	—5,110	—818	—5,928
No Denomination ...	13,620	6,137	19,757	1,568	1,120	2,688	—12,052	—5,017	—17,069
Agnostic ...	834	137	971	2,546	538	3,084	1,712	401	2,113
Others ...	638	463	1,101	3,531	2,116	5,647	2,893	1,653	4,546
Total ...	22,955	8,056	31,011	10,398	4,275	14,673	—12,557	—3,781	—16,338
<b>IV.—NO RELIGION.</b>									
No Religion ...	5,149	1,333	6,482	7,559	1,692	9,251	2,410	359	2,769
Atheist ...	245	29	274	516	63	579	271	34	305
Others ...	19	4	23	164	22	186	145	18	163
Total ...	5,413	1,366	6,779	8,239	1,777	10,016	2,826	411	3,237
<b>V.—OBJECT TO STATE ...</b>									
...	28,443	13,688	42,131	55,766	27,237	83,003	27,323	13,549	40,872
<b>VI.—UNSPECIFIED</b>									
...	9,411	4,649	14,060	25,942	10,172	36,114	16,531	5,523	22,054
Grand Total	1,977,928	1,795,873	3,773,801	2,313,035	2,141,970	4,455,005	335,107	346,097	681,204

Note. — indicates a decrease.

### 13.—EDUCATION OF THE POPULATION OF THE STATES AND TERRITORIES OF THE COMMONWEALTH OF AUSTRALIA

at the Census of 3rd April, 1911. (Exclusive of Full-blooded Aborigines.)

States and Territories.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read Only.	Read and Write.	Read Only.			
MALES.							
STATES—							
New South Wales ...	696,258	2,565	5,889	497	134,215	18,274	857,691
Victoria ...	547,753	1,271	3,572	532	88,995	13,468	655,598
Queensland ...	265,896	1,136	6,185	678	49,406	6,205	329,506
South Australia ...	169,508	556	1,156	102	31,891	4,145	207,358
West Australia ...	128,648	311	4,371	303	22,524	5,408	161,565
Tasmania ...	76,247	456	181	20	18,244	2,443	97,591
TERRITORIES—							
Northern Territory ...	1,126	4	852	29	642	81	2,734
Fed. Cap. Territory ...	820	9	2	...	140	21	992
Total Commonwealth ...	1,886,256	6,308	22,208	2,161	346,057	50,045	2,313,035
FEMALES.							
STATES—							
New South Wales ...	645,022	3,140	650	61	123,808	16,355	789,036
Victoria ...	555,675	2,626	665	66	84,449	16,479	659,960
Queensland ...	225,086	1,272	1,772	252	43,787	4,138	276,307
South Australia ...	165,634	993	531	88	29,987	3,967	201,200
West Australia ...	96,702	256	317	15	20,724	2,535	120,549
Tasmania ...	74,795	409	30	4	16,235	2,147	93,620
TERRITORIES—							
Northern Territory ...	292	...	37	...	203	44	576
Fed. Cap. Territory ...	568	5	...	...	132	17	722
Total Commonwealth ...	1,763,774	8,701	4,002	486	319,325	45,682	2,141,970
PERSONS.							
STATES—							
New South Wales ...	1,341,280	5,705	6,539	558	258,023	34,629	1,646,734
Victoria ...	1,103,428	3,897	4,237	598	173,444	29,947	1,315,551
Queensland ...	490,982	2,408	7,957	930	93,193	10,343	605,813
South Australia ...	335,142	1,549	1,687	190	61,878	8,112	408,558
West Australia ...	225,350	567	4,688	318	43,248	7,943	282,114
Tasmania ...	151,042	865	211	24	34,479	4,590	191,211
TERRITORIES—							
Northern Territory ...	1,418	4	889	29	845	125	3,310
Fed. Cap. Territory ...	1,388	14	2	...	272	38	1,714
Total Commonwealth ...	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

**14.—POPULATION OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF  
3rd APRIL, 1911, CLASSIFIED ACCORDING TO EDUCATION AND AGE.**

(Exclusive of Full-blooded Aborigines.)

Age.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read only.	Read and Write.	Read only.			

**MALES.**

0-4 ... ..	...	...	...	...	267,411	...	267,411
5-9 ... ..	177,463	1,131	53	24	39,764	11,151	229,586
10-14 ... ..	212,935	89	146	9	1,444	1,181	215,804
15-19 ... ..	221,279	109	800	46	1,813	2,784	226,831
20 and upwards	1,266,625	4,911	20,813	2,062	34,307	32,284	1,361,002
Unspecified ...	7,954	68	396	20	1,318	2,645	12,401
<b>Total ...</b>	<b>1,886,256</b>	<b>6,308</b>	<b>22,208</b>	<b>2,161</b>	<b>346,057</b>	<b>50,045</b>	<b>2,313,035</b>

**FEMALES.**

0-4 ... ..	...	...	...	...	258,222	...	258,222
5-9 ... ..	173,567	1,116	46	8	36,536	12,387	223,660
10-14 ... ..	209,904	75	95	6	1,062	1,215	212,357
15-19 ... ..	218,273	50	101	5	847	2,429	221,705
20 and upwards	1,153,611	7,375	3,735	462	21,819	28,041	1,215,043
Unspecified ...	8,419	85	25	5	839	1,610	10,983
<b>Total ...</b>	<b>1,763,774</b>	<b>8,701</b>	<b>4,002</b>	<b>486</b>	<b>319,325</b>	<b>45,682</b>	<b>2,141,970</b>

**PERSONS.**

0-4 ... ..	...	...	...	...	525,633	...	525,633
5-9 ... ..	351,030	2,247	99	32	76,300	23,538	453,246
10-14 ... ..	422,839	164	241	15	2,506	2,396	428,161
15-19 ... ..	439,552	159	901	51	2,660	5,213	448,536
20 and upwards	2,420,236	12,286	24,548	2,524	56,126	60,325	2,576,045
Unspecified ...	16,373	153	421	25	2,157	4,255	23,384
<b>Total ...</b>	<b>3,650,030</b>	<b>15,009</b>	<b>26,210</b>	<b>2,647</b>	<b>665,382</b>	<b>95,727</b>	<b>4,455,005</b>



**15.—SCHOOL ATTENDANCES OF CHILDREN AGED LAST BIRTHDAY FROM 6 to 13 YEARS**

in the States and Territories of the Commonwealth of Australia at the Census of 3rd April, 1911

(Exclusive of Full-blooded Aborigines.)

NOTE.—In this and the following table the term "State School" comprises all schools, whether primary or secondary, which are under the direct control of the State.

States and Territories.	Number being educated at			Number recorded as "scholar," but class of school not stated	Number not indicated as receiving instruction.	Total.
	State School.	Private School.	Home.			

<b>MALES.</b>						
<b>STATES—</b>						
New South Wales ...	91,979	19,107	3,436	3,809	11,574	129,905
Victoria ...	78,185	15,367	1,198	1,826	6,031	102,607
Queensland ...	38,167	5,184	1,517	904	5,089	50,861
South Australia ...	22,817	3,548	521	380	4,409	31,675
Western Australia ...	15,289	3,239	558	508	1,653	21,247
Tasmania ...	11,042	2,113	459	485	2,832	16,931
<b>TERRITORIES—</b>						
Northern Territory ...	32	25	9	1	56	123
Federal Capital Territory	98	...	22	4	25	149
<b>Total Commonwealth ...</b>	<b>257,609</b>	<b>48,583</b>	<b>7,720</b>	<b>7,917</b>	<b>31,669</b>	<b>353,498</b>

<b>FEMALES.</b>						
<b>STATES—</b>						
New South Wales ...	84,129	23,329	4,191	3,279	12,802	127,730
Victoria ...	73,136	17,447	1,602	1,832	6,493	100,510
Queensland ...	35,656	6,765	1,713	1,032	4,759	49,925
South Australia ...	21,343	4,005	631	762	4,293	31,034
Western Australia ...	13,906	4,015	681	404	1,813	20,819
Tasmania ...	10,267	2,496	594	477	2,501	16,335
<b>TERRITORIES—</b>						
Northern Territory ...	32	20	6	...	69	127
Federal Capital Territory	85	3	13	5	27	133
<b>Total Commonwealth ...</b>	<b>238,554</b>	<b>58,080</b>	<b>9,431</b>	<b>7,791</b>	<b>32,757</b>	<b>346,613</b>

<b>PERSONS.</b>						
<b>STATES—</b>						
New South Wales ...	176,108	42,436	7,627	7,088	24,376	257,635
Victoria ...	151,321	32,814	2,800	3,658	12,524	203,117
Queensland ...	73,823	11,949	3,230	1,936	9,848	100,786
South Australia ...	44,160	7,553	1,152	1,142	8,702	62,709
Western Australia ...	29,195	7,254	1,239	912	3,466	42,066
Tasmania ...	21,309	4,609	1,053	962	5,333	33,266
<b>TERRITORIES—</b>						
Northern Territory ...	64	45	15	1	125	250
Federal Capital Territory	183	3	35	9	52	282
<b>Total Commonwealth ...</b>	<b>496,163</b>	<b>106,663</b>	<b>17,151</b>	<b>15,708</b>	<b>64,426</b>	<b>700,111</b>

# 16.—POPULATION OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF 3rd APRIL, 1911, CLASSIFIED ACCORDING TO SCHOOLING AND AGE

(Exclusive of Full-blooded Aborigines).

Age.	Number being Educated at—				Number Re- corded as "Scholar," but Class of School not Stated.	Number not Indi- cated as Receiving Instruction.	Total.
	State School.	Private School.	Home.	Uni- versity.			
MALES.							
Under 5 ...	4,760	1,349	170	...	167	260,965	267,411
5 ...	16,909	3,454	1,501	...	768	26,076	48,708
6 ...	29,703	5,818	1,732	...	1,010	9,533	47,796
7 ...	32,844	6,201	1,299	...	1,033	3,070	44,447
8 ...	34,483	6,293	1,081	...	999	1,797	44,653
9 ...	34,268	6,198	984	...	976	1,556	43,982
10 ...	35,343	6,252	802	...	1,025	1,495	44,917
11 ...	34,705	6,231	708	...	1,022	1,990	44,656
12 ...	30,169	5,866	598	...	983	3,062	40,678
13 ...	26,094	5,724	516	...	869	9,166	42,369
14 ...	11,747	4,793	331	...	607	25,706	43,184
15 ...	3,835	3,818	207	...	256	35,581	43,697
16 ...	1,380	2,724	122	30	134	40,210	44,600
17 ...	637	1,691	88	102	76	43,171	45,765
18 ...	384	1,062	68	259	64	45,448	47,285
19 ...	248	663	51	270	43	44,209	45,484
20 and upwards	278	1,827	164	1,262	78	1,357,393	1,361,002
Unspecified	599	181	28	3	183	11,407	12,401
Total ...	298,386	70,145	10,450	1,926	10,293	1,921,835	2,313,035

FEMALES.							
Under 5 ...	4,313	1,499	150	...	137	252,123	258,222
5 ...	15,112	3,526	1,662	...	977	26,027	47,304
6 ...	26,938	6,274	2,045	...	1,016	10,115	46,388
7 ...	30,281	7,287	1,574	...	997	3,365	43,504
8 ...	32,341	7,398	1,233	...	1,062	1,898	43,932
9 ...	31,429	7,325	1,159	...	1,045	1,574	42,532
10 ...	32,877	7,752	1,031	...	953	1,526	44,139
11 ...	32,439	7,808	925	...	951	2,029	44,152
12 ...	28,830	7,247	764	...	939	3,160	40,940
13 ...	23,419	6,989	700	...	828	9,090	41,026
14 ...	11,792	5,794	531	...	604	23,379	42,100
15 ...	4,624	4,367	349	...	307	33,791	43,438
16 ...	1,819	3,376	198	43	208	38,155	43,794
17 ...	899	1,864	116	44	114	41,687	44,724
18 ...	520	993	72	74	98	43,710	45,467
19 ...	398	519	35	94	67	43,169	44,282
20 and upwards	276	731	28	284	820	1,212,904	1,215,043
Unspecified	512	211	21	...	161	10,078	10,983
Total ...	278,819	80,960	12,593	539	11,279	1,757,780	2,141,970

PERSONS.							
Under 5 ...	9,073	2,848	320	...	304	513,088	525,633
5 ...	32,021	6,980	3,163	...	1,745	52,103	96,012
6 ...	56,641	12,092	3,777	...	2,026	19,648	94,184
7 ...	63,125	13,488	2,873	...	2,030	6,435	87,951
8 ...	66,824	13,691	2,314	...	2,061	3,695	88,585
9 ...	65,697	13,523	2,143	...	2,021	3,130	86,514
10 ...	68,220	14,004	1,833	...	1,978	3,021	89,056
11 ...	67,144	14,039	1,633	...	1,973	4,019	88,808
12 ...	58,999	13,113	1,362	...	1,922	6,222	81,618
13 ...	49,513	12,713	1,216	...	1,697	18,256	83,395
14 ...	23,539	10,587	862	...	1,211	49,085	85,284
15 ...	8,459	8,185	556	...	563	69,372	87,135
16 ...	3,199	6,100	320	73	337	78,365	88,394
17 ...	1,536	3,555	204	146	190	84,858	90,489
18 ...	904	2,055	140	333	162	89,158	92,752
19 ...	646	1,182	86	364	110	87,378	89,766
20 and upwards	554	2,558	192	1,546	898	2,570,297	2,576,045
Unspecified	1,111	392	49	3	344	21,485	23,384
Total ...	577,205	151,105	23,043	2,465	21,572	3,679,615	4,455,005

# 17.—NUMBER OF BLIND PERSONS AND DEAF MUTES IN THE SEVERAL STATES OF THE COMMONWEALTH

at the Census of 3rd April, 1911. (Exclusive of Full-blooded Aborigines.)

States.	Blind.			Deaf and Dumb.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
New South Wales ...	591	420	1,011	330	310	640
Victoria ...	595	507	1,102	280	255	535
Queensland ...	213	170	383	160	97	257
South Australia ...	192	166	358	134†	112†	246†
Western Australia ...	85	57	142	40	36	76
Tasmania ...	78	68	146	54	44	98
Total Commonwealth ...	1,754	1,388	3,142*	998	854	1,852*

\* Including 21 blind deaf mutes. † It is probable that the decrease in South Australia is in part only apparent, and attributable to a difference in interpretation at the two censuses.

# 18.—NUMBER OF PERSONS RECORDED IN EACH STATE AND TERRITORY OF THE COMMONWEALTH AT THE CENSUS OF 3rd APRIL, 1911, CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND SEX

(Exclusive of Full-blooded Aborigines.)

Conjugal Condition.	States.						Territories.		Com-wealth.
	N.S.W.	Victoria	Q'land.	S. Aust.	W.Aust.	Tas.	North'n	Fd. Cap.	
MALES.									
Never married ...	556,350	422,604	223,578	132,342	106,060	63,200	2,060	683	1,506,877
Married ...	275,428	211,750	96,546	69,102	50,702	31,470	575	276	735,849
Widowed ...	22,887	19,820	8,513	5,627	4,180	2,553	65	30	63,675
Divorced...	1,230	575	214	93	187	59	1	1	2,360
Not stated ...	1,803	842	655	194	436	309	33	2	4,274
Total ...	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035
FEMALES.									
Never married ...	467,603	394,857	168,479	119,330	68,807	56,793	346	451	1,276,666
Married ...	276,216	216,465	93,914	69,385	45,780	31,573	207	233	733,773
Widowed ...	43,571	47,516	13,720	12,334	5,785	5,086	19	37	128,068
Divorced...	1,190	665	85	62	103	34	...	1	2,140
Not stated ...	456	457	109	89	74	134	4	...	1,323
Total ...	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970
PERSONS.									
Never married ...	1,023,953	817,461	392,057	251,672	174,867	119,993	2,406	1,134	2,783,543
Married ...	551,644	428,215	190,460	138,487	96,482	63,043	782	509	1,469,622
Widowed ...	66,458	67,336	22,233	17,961	9,965	7,639	84	67	191,743
Divorced ...	2,420	1,240	299	155	290	93	1	2	4,500
Not stated ...	2,259	1,299	764	283	510	443	37	2	5,597
Total ...	1,616,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

### 19.—COMPARATIVE STATEMENT OF THE POPULATION OF THE COMMONWEALTH AT THE CENSUSES OF 1901 AND 1911, CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND SEX

(Exclusive of Full-blooded Aborigines).

Conjugal Condition.	Males.			Females.			Persons.		
	Census of 31st Mar., 1901.	Census of 3rd April, 1911.	Increase during 10 yrs.	Census of 31st Mar., 1901.	Census of 3rd April, 1911.	Increase during 10 yrs.	Census of 31st Mar., 1901.	Census of 3rd April, 1911.	Increase during 10 yrs.
Never married	1,348,490	1,506,877	158,387	1,116,473	1,276,666	160,193	2,464,963	2,783,543	318,580
Married	563,919	735,549	171,990	568,340	733,773	165,433	1,132,259	1,469,622	337,363
Widowed	56,830	63,675	6,845	106,949	128,068	21,119	163,779	191,743	27,964
Divorced	1,228	2,360	1,132	1,147	2,140	993	2,375	4,500	2,125
Not stated	7,461	4,274	-3,187	2,964	1,323	-1,641	10,425	5,597	-4,828
<b>Total</b>	<b>1,977,928</b>	<b>2,313,035</b>	<b>335,107</b>	<b>1,795,873</b>	<b>2,141,970</b>	<b>346,097</b>	<b>3,773,801</b>	<b>4,455,005</b>	<b>681,204</b>

NOTE: — denotes decrease.

### § 4. Elements of Growth of Population.

3. **Net Immigration, p. 132.**—The following table gives particulars of net immigration for the year 1911 :—

#### NET IMMIGRATION,\* 1911.

Particulars.	States.						Territories.		C'with..
	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	N. Ter.	Federal Capital Ter.	
Arrivals	†326,416	276,946	109,720	95,847	41,359	41,503	412	†	141,909
Departures	†325,978	233,370	97,047	91,562	29,178	45,337	431	†	72,609
Excess of arrivals over departures	†438	43,576	12,673	4,285	12,181	-3,834	-19	†256	69,300

Note. — signifies excess of departures over arrivals. \* Figures for States and Territories represent Interstate, Interterritorial and Oversea migration; those for Commonwealth represent Oversea migration only. † Including Federal Capital Territory. ‡ Included with New South Wales migration.

4. **Total Increase, p. 134.**—The following table gives particulars of the total increase in population for each State and Territory and for the Commonwealth during the year 1911 :—

#### TOTAL INCREASE OF POPULATION, 1911.

Particulars.	States.						Territories.		C'with..
	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	N. Ter.	Federal Capital Ter.	
Excess of births over deaths	30,391	17,810	10,440	7,019	5,168	3,510	-34	20	74,324
Excess of arrivals over departures	182	43,576	12,673	4,285	12,181	-3,834	-19	256	69,300
<b>Total increase</b>	<b>30,573</b>	<b>61,386</b>	<b>23,113</b>	<b>11,304</b>	<b>17,349</b>	<b>-324</b>	<b>-53</b>	<b>276</b>	<b>143,624</b>

NOTE. — signifies excess of departures over arrivals.

### § 9. Enumerations and Estimates.

5. **Estimates of Population, pp. 142 to 145.**—The following table shows the estimated population of each State and the Commonwealth on the 31st December, 1911 :—

#### ESTIMATED POPULATION ON 31st DECEMBER, 1911.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	N. Ter.	Federal Capital Ter.	
Males ...	870,966	685,931	337,955	212,650	168,094	98,594	2,662	1,068	2,377,920
Females ...	801,817	676,863	284,174	205,522	126,087	94,885	586	853	2,190,787
Total ...	1,672,783	1,362,794	622,129	418,172	294,181	193,479	3,248	1,921	4,568,707

### SECTION V.

#### VITAL STATISTICS.

### § 1. Births.

1. **Male and Female Births, p. 167.**—The total number of male and female births registered, and the birth rates per 1000 of the population in each State and Territory and in the Commonwealth, during the year 1911 were as follows :—

#### BIRTHS AND BIRTH RATES, 1911.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Federal Capital Ter.	
Males ...	24,383	16,934	8,703	5,615	4,124	2,716	16	17	62,508
Females ...	23,154	16,092	8,281	5,442	3,967	2,721	15	13	59,685
Total ...	47,537	33,026	16,984	11,057	8,091	5,437	31	30	122,193
Birth rates ...	28.75	24.84	27.65	26.89	28.21	28.57	9.34	16.85	27.21

### § 2. Marriages.

1. **Marriages, p. 180.**—The following statement shows the number of marriages registered in each State and Territory and in the Commonwealth, and the marriage rates per 1000 of the mean population, during the year 1911 :—

#### MARRIAGES AND MARRIAGE RATES, 1911.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	Federal Capital Ter.	
No. of marriages	15,278	11,088	5,167	4,036	2,421	1,477	10	5	39,482
Marriage rates*	9.24	8.34	8.41	9.81	8.44	7.76	3.01	2.81	8.79

\* Number of marriages, not persons married, per 1000 of mean population.

### § 3. Deaths.

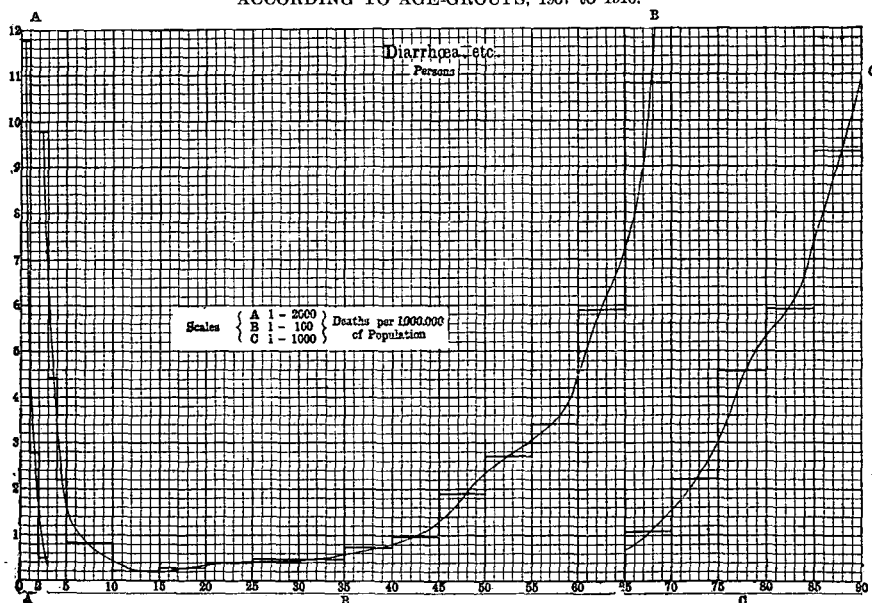
1. **Male and Female Deaths, p. 187.**—The number of deaths registered in each State and Territory and in the Commonwealth during 1911, and the death rates per 1000 of the mean population, are shewn in the following table:—

**MALE AND FEMALE DEATHS AND DEATH RATES, 1911.**

Particulars.	States.						Territories.		C'wth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Federal Capital Ter.	
Male ...	9,973	8,355	4,060	2,179	1,923	1,037	59	5	27,591
Female ...	7,173	6,861	2,484	1,859	1,000	890	6	5	20,278
Total ...	17,146	15,216	6,544	4,038	2,923	1,927	65	10	47,869
Death rates...	10.37	11.45	10.65	9.82	10.19	10.13	19.58	5.62	10.66

**Frequency of Deaths according to Sex and Age.**—Diarrhœa, Dysentery, Enteritis (see par. 29, p. 234).—The following table, based on the Australian experience for the years 1907 to 1910 inclusive, indicates the distribution of deaths from these causes according to age and sex. The figures given represent the number of deaths per annum in a total population of 10,000,000, distributed according to sex and age in the same manner as the Australian population. The number of deaths from these causes is highest under 12 months, and rapidly diminishes to a minimum at about age 13, increasing thenceforward to about age 77, and subsequently declining with the diminishing numbers exposed to risk.

**COMMONWEALTH OF AUSTRALIA DEATH-RATES FROM DIARRHŒA, ETC., ACCORDING TO AGE-GROUPS, 1907 to 1910.**



**EXPLANATION OF GRAPH.**—The curves shew the death-rate per annum for Diarrhœa, etc., per million persons of the corresponding age-group. The base of each small square represents one year of age, and the height of each small square represents 400 persons on curve A, 20 persons on curve B, and 200 persons on curve C.

**FREQUENCY OF DEATHS ACCORDING TO SEX AND AGE.—DIARRHŒA, DYSENTERY,  
ENTERITIS.—NUMBER OF DEATHS PER ANNUM PER 10,000,000 OF TOTAL  
POPULATION, AUSTRALIA, 1907 to 1910.**

Age Groups.	Males.	Females.	Persons.	Age Groups.	Males.	Females.	Persons.
0	3,239	2,579	5,818	50-54	52	34	86
1	663	582	1,245	55-59	55	32	87
2	102	115	217	60-64	67	64	131
3	52	49	101	65-69	102	96	198
4	25	25	50	70-74	144	117	261
5-9	47	54	101	75-79	150	120	270
10-14	15	10	25	80-84	99	76	175
15-19	17	11	28	85-89	43	37	80
20-24	15	22	37	90-94	12	11	23
25-29	20	21	41	95-99	2	3	5
30-34	19	18	37	100 & over	...	...	...
35-39	32	27	59	Not stated	3	2	5
40-44	31	25	56				
45-49	40	38	78	Total ...	5,046	4,168	9,214

**Death Rates from Diarrhœa, etc., according to Age Groups** (see par. 29, p. 234).—The figures given above, while indicating the relative frequency with which deaths occur from the causes specified in a given population, do not give a true indication of the force with which these causes act at the several ages, since account is not taken of the respective numbers subject to risk. To present this aspect of the question, the following table has been compiled shewing the number of deaths per annum in each sex and age group per 1,000,000 of population in such group.

This brings out clearly the manner in which the rate of death from these causes diminishes rapidly from the earliest age, at which it is very heavy, to about age 13, and increases continuously to the oldest age. The progression in rate is very similar for males, females and persons. A graph shewing the rate for persons appears on p. 1240.

**DEATH RATES FROM DIARRHŒA, ENTERITIS AND DYSENTERY, PER MILLION  
PER ANNUM OF THE CORRESPONDING SEX AND AGE GROUP, AUSTRALIA,  
1907 to 1910.**

Age Group.	Diarrhœa, etc.			Age Group.	Diarrhœa, etc.			Age Group.	Diarrhœa, etc.		
	M.	F.	P.		M.	F.	P.		M.	F.	P.
0	25,740	21,242	23,531	20-24	35	44	40	60-64	495	713	591
1	5,810	5,239	5,528	25-29	41	56	48	65-69	993	1,193	1,081
2	891	1,069	978	30-34	48	48	48	70-74	2,049	2,446	2,213
3	449	439	444	35-39	71	76	73	75-79	4,647	4,462	4,567
4	215	221	218	40-44	96	97	97	80-84	5,862	6,005	5,926
5-9	86	80	83	45-49	172	215	190	85	11,775	7,565	9,332
10-14	27	16	22	50-54	270	273	271				
15-19	34	23	28	55-59	411	255	342				

## SECTION VIII.

### AGRICULTURAL PRODUCTION.

#### § 4. Wheat.

1. **Progress of Wheat Growing, p. 364.**—The following table shews the estimated area under wheat and the prospective yields of wheat in each State and the Commonwealth for the season 1911-12:—

#### ESTIMATED AREAS UNDER WHEAT AND PROSPECTIVE YIELDS, 1911-12.

Particulars.	N.S.W.	Vic.*	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
Estimated area ... Acres	2,334,780	2,164,066	47,538	2,190,782	559,145	41,905	7,338,216
Prospective yield ... Bush.	24,616,100	20,891,877	381,224	20,352,720	5,149,889	826,528	72,218,338
Average yield per acre ..	10.54	9.65	8.02	9.29	9.21	19.72	9.84

\* Final figures.

## SECTION XII.

### MINES AND MINING.

#### § 2. Gold.

2. **Production of Gold at Various Periods, p. 485.**—The Australian gold yield for 1911 is shewn in the subjoined table. The figures are open to final revision, but the totals will not be materially altered:—

#### GOLD RAISED IN AUSTRALIA, 1911.

Particulars.	States.						Territories.		C'wealth.
	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Northn. Terr.	Fd. Cap. Ter.	
Quantity Fine ozs.	181,121	504,000	386,165	3,531	1,370,668	31,101	7,277	...	2,484,063
Value ... £	769,353	2,140,855	1,640,323	15,000	5,823,075	132,108	30,910	...	10,551,624

The quantity raised in New Zealand during the year 1911 was 427,833 fine ounces, valued at £1,817,316, making the total yield for Australasia 2,911,896 fine ounces, valued at £12,368,940.

## SECTION XV.

### COMMERCE.

#### Non-Coincidences in the Statistics of Trade.

To those unfamiliar with the nature of Trade Statistics there are certain non-coincidences or apparent discrepancies between the Trade Statistics of different countries which are sometimes erroneously mistaken for real discrepancies. The following remarks will make the nature of the differences clear, and will shew why there cannot be agreement although the statistics are accurately kept.

(i.) *Exports to Various Countries.* It has been pointed out on page 621 of this volume that the value recorded in this country, of exports to any particular foreign country, does not represent the actual purchase of Australian goods by that country.



It is obvious that at the time of export, the ultimate destination (place of consumption) cannot be known, and the most that can be obtained is the final point to which the goods are originally consigned from the exporting country. In this way the exports recorded in Australia as to the United Kingdom include, of course, goods consigned to that country for sale, but which are there purchased and again despatched to all parts of the world.

In regard to wheat the position is frequently even more indefinite, for in many instances wheat ships are despatched to the Canary Islands, the Channel Islands or some other convenient port, there to receive orders as to their further, though perhaps not final, destination. Wheat is frequently sold and resold many times between its despatch from the exporting country and its arrival in the country of consumption, and consequently such wheat indicates no direct trade association between the producing and the consuming countries, the trade operation being, so far as it immediately affects the producing country, with the first foreign buyer.

The foregoing amply illustrates the limitations of statistics of the export trade in so far as any particular country is concerned, even when confined to ordinary commercial commodities of limited life.

In regard to gold bullion and specie and similar things which pass readily and continuously from country to country, and soon lose their identity of origin, no country of consumption can be established statistically. Gold is largely shipped from Australia "under option," that is, it may be carried in a vessel to the terminal port of its voyage, or it may be diverted at some intermediate port according to the business requirements of the consignee. In this way Australian gold shipped to order of London bankers may be diverted at Colombo to, say, China. In this case the business is actually between (i.) Australia and London, and (ii.) London and China, though in the Commonwealth export returns the transaction would appear as an export to Colombo, the export entry having been passed as to Colombo "optional." In fact, the large consignments of gold made to India and to South Africa have not been made in satisfaction of claims of those countries on Australia, but in satisfaction of English claims, and have merely been consigned to the countries named by order of the London bankers whose clients (the British Government) required large sums in gold in the countries named.

The following tabular statement of the trade between Germany and the Commonwealth, as recorded in each country, may be taken as an illustration of the extent to which the difference may amount between the results as ascertained by the import returns of one country and the export returns of the other.

#### COMMONWEALTH EXPORTS TO GERMANY.

	Commonwealth Records.		German Records.*		Excess of Import Records.	
	Exports to Germany.		Imports from Com'wealth.			
	1909.	1910.	1909.	1910.	1909.	1910.
	£	£	£	£	£	£
Merchandise ...	5,944,241	7,339,874	11,654,850	13,392,800	5,710,609	6,052,926
Gold ...	450,393	581	202,200	1,800	—248,193	1,219
Total ...	6,394,634	7,340,455	11,857,050	13,394,600	5,462,416 85.42%	6,054,145 51.06%

## GERMAN EXPORTS TO THE COMMONWEALTH.

	German Records.*		Commonwealth Records.		Excess of Import Records.	
	Exports to Commonwealth.		Imports from Germany.			
	1909.	1910.	1909.	1910.	1909.	1910.
	£	£	£	£	£	£
Merchandise ...	2,918,600	3,164,700	4,537,112	5,214,149	1,618,512	2,049,449
Gold ...	...	1,500	1,500	997	1,500	—503
Total ...	2,918,600	3,166,200	4,538,612	5,215,146	1,620,012 55.52%	2,048,946 45.15%

\* Figures kindly supplied by W. de Haas, Esquire, German Trade Commissioner in Australia.

The discrepancies shewn above are not in any way due to inaccuracy of either record, but merely to the necessary limitations of all export trade statistics, from which there is no escape.

## SECTION XXVII.

## INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

## § 3. Legislative Regulation of Wages and Terms of Contract.

3. **The Arbitration Court System** (page 1062).—The *Industrial Arbitration Act* 1912 of New South Wales came into operation by proclamation on 18th April, 1912.

## SECTION XXVIII.

## DEFENCE.

## 1. Military Defence.

2. **Land Defence of Federated Australia** (page 1073).—On 31st March, 1912, the land forces were:—

Permanently employed ...	2,042	Unattached List of Officers ...	291
Militia ...	21,429	Reserve of Officers ...	671
Volunteers ...	127	A.A. Medical Corps Reserve ...	224
Area Officers ...	209	Chaplains ...	163
Rifle Clubs ...	52,726		
Cadets (Compulsory Trainees) ...	91,479	Total ...	169,361

## § 4. Commonwealth Defence Legislation.

2. **The Defence Acts of 1909, 1910 and 1911** (page 1079).—Under the authority of the Act of 1909, factories have been established in connection with the Defence Department. The Commonwealth Harness, Saddlery, and Leather Accoutrements Factory at Clifton Hill, Victoria, was opened in September, 1911. The first output from the Cordite Factory at Maribyrnong, Victoria, was in June, 1912. Work has been proceeding at the Clothing Factory at South Melbourne, Victoria, since the beginning of 1912. The Small Arms Factory at Lithgow, N.S.W., was opened on 8th June, 1912. These establishments will be under the control of the Defence Department, but will manufacture goods for other departments.

## § 5. The New Defence System.

3. **Organisation of Land Forces under the Defence Act 1903-11** (p. 1085).—Efficiency requirements for Citizen Forces were promulgated in regulations issued in June, 1912. The prescribed training consists of sixteen whole-day drills, or their equivalent, of which not less than eight must be in camps of continuous training; provided that trainees in the Naval Forces, and in the Artillery and Engineers, must attend twenty-five whole-day drills or equivalent, not less than seventeen in camp. Whole-day, half-day, and night drills are to last not less than six, three, and one-and-a-half hours respectively, but whole-day drills in camp include the whole of the twenty-four hours. The nature of the training will be as hitherto in force in the Militia, and authorised from time to time by the Military Board. Trainees are to attend statutory parades, of which notification shall have been given. Leave from these may be granted by commanding officers, if necessary, owing to temporary absence from the locality, but if such absence is over a month, training must be performed with some other convenient unit. Leave may also be granted for illness or other unavoidable cause; the necessary training being made up by attendance at voluntary parades.

A specially appointed officer is to classify trainees at the end of each annual training as efficient or non-efficient. Non-efficients must attend an additional year's training for each year of non-efficiency. Before being classed as efficient, trainees must have attended all statutory parades, or their prescribed equivalent. Absence without leave from a statutory parade necessitates attendance at two voluntary parades. The standard of efficiency will be based on the number of years' training already performed, the work of the unit during the year, and the grade of proficiency that should be reached by a man of ordinary capacity giving proper attention to his work.

4. **Compulsory Training in Operation** (page 1088).—At the end of April, 1912, the total registrations in training areas numbered 179,028; total medical examinations, 118,403; number medically fit, 109,600; percentage of those medically examined found fit, 92.6; number unfit and temporarily unfit, 8803; total exemptions in training areas, 63,953; total number liable for training, 92,047. The total number actually in training was, military, 88,525; naval, 2990. Total, 91,515.

The number of Junior Cadets medically examined up to 30th April, 1912, was 46,505, of whom 45,347 (97.5 per cent.) were medically fit.

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